SESSION: 1-7

A Unique Public Private Partnership for Primary Prevention of Diabetes and Cardiovascular Disease at the Worksite: A Collaboration of CDC, GE Energy and the National Business Group on Health

Pamela Allweiss, MD, MPH

Centers for Disease Control and Prevention

Background: The worksite represents a unique opportunity for diabetes education and prevention, which can positively impact productivity. To address this issue, the National Diabetes Education Program (NDEP), a joint CDC and NIH program through its Business and Managed Care Workgroup (BMC), has developed a web based tool for businesses called www.diabetesatwork.org. The target audiences include: Large and small businesses, unions, occupational health professionals, public health agencies, managed care groups, non-profit organizations, wellness and benefits personnel. This tool has lesson plans that can be adapted for on site education. NBGH and the multinational GE Power partnered with DDT to develop a program for employees at high risk for developing diabetes and cardiovascular disease and is in the process of measuring outcomes and ROI (Return on Investment). GE Power can serve as a model for other businesses.

Methods: Identify and evaluate the populations (Participants vs Control group), through serial cardiovascular HRAs (Health Risk Assessments) at multiple worksites. Adapt the diabetesatwork.org lesson plans to complement its own its own program, 0,5,10,25r (0 smoking, 5 fruits/vegetables/day, 10,000 steps/day, BMI<25), and its Health Coach program. Monitor participants' survey on lifestyle changes (dose response based on % of activities attended). Monitor healthcare costs, utilization, and changes in HRA health status during periods of: Pre-intervention Intervention Post Intervention (6, 12, 18 month intervals). Costs included: Health Plan Claims Data, prescription costs, disability costs data, utilization data (admissions, ER visits), disability days.

Results: Pre and post HRA monitors: Total Cholesterol (mg/dl): -3.1, p = 0.000, HDL Cholesterol (mg/dl): + 1.6, p = 0.000, LDL Cholesterol (mg/dl): -4.0, p = 0.000, triglycerides: -7.7, p = 0.039, Serum glucose (mg/dl): -5.4, p = 0.000, Systolic blood pressure (mmHg): -2.5, p = 0.000, Diastolic blood pressure: -0.7, p = 0.012, BMI (kg/m^2): -0.0, p = 0.507, Waist Circumference (cm): -0.1, p = 0.412

Change in Predicted Risk of Primary Cardiac Event (Cardiac Event = fatal non-fatal MI, sudden death or surgical intervention)= Mean change in Real 5 yr. CHD risk: -0.002, p = 0.001, Mean change in Real 10 yr. CHD risk: -0.003, p = 0.003, Mean change in 5 yr. CHD risk (age held constant): -0.004, p = 0.000, Mean change in 10 yr. CHD risk (age held constant): -0.008, p = 0.000, Mean change in 10 yr. CHD risk (age held constant): -0.008, p = 0.000, Per 1000 employees screened, 4 events (in 5 years) are averted. 24.8 events averted in our screened population. At $40,000 per event = $992,000.

SESSION: 1-7

A Model for Worksite Wellness Programs with Specific Application to Chronic Diseases

James Dotson, Jr., Ph D, CHES

Constella Group, LLC

Public health agencies and businesses share a vital interest in employee health and mutually benefit from corporate wellness programs. Business bears a tremendous burden in health care costs and lost productivity due to illness of employees. Aggregate U.S. health care spending reached $1.7 trillion in 2003. Private business bore more than one-quarter of this spending between 1987 and 2000.(1) A very large proportion of this spending can be attributed to chronic disease and the modifiable risk factors that lead to chronic disease.

The importance and value of addressing the health of the population through the workplace can not be denied. Because workers constitute a significant proportion of the nation's total adult population, employers and business are strategically positioned to implement efforts to reduce health risk behaviors. Worksites have a ready audience for wellness programs, and employers and business leadership can be instrumental in promoting health and supporting health promotion programs for employees and their families. There is evidence that worksite wellness initiatives targeted to modifiable risk factors have reduced health care costs and led to a healthier and more productive workforce.

We present an overview of a model for effective worksite wellness programs that consists of a cyclical 5-stage process: assessing wellness, planning for wellness, establishing wellness, measuring success, with providing corporate leadership serving as a key stage that cuts across all other stages. We then provide more detailed attention to the implementation phase of the model presenting strategies for establishing a wellness program focused on chronic diseases. In our approach, rather providing services or conducting programming for a number of chronic diseases, we focus on addressing the most modifiable risk factors associated with these chronic diseases: physical inactivity, poor nutrition and tobacco use. Strategies for addressing these risk factors are approached from four different levels: policy, insurance coverage, health promotion programs, and community partnerships. This framework complements the dynamism of the cyclical model of corporate wellness. It brings into focus the need for participation from company leadership as well as management to institute policy that is supportive of enhancing the health and wellness of employees, and providing insurance coverage that is aligned with this policy. It also recommends using evidence-based interventions in implementing specific programs to address risk factors, and extending the wellness program to include the community in which the workplace is located in order to ensure an environment that is supportive of a healthy work force.

By the conclusion of this presentation, participants will have a model that may be used to develop a worksite wellness program and specific strategies for addressing modifiable risk factors associated with chronic diseases.

1. Simon PA and Fielding JA. Public health and business: a partnership that makes cents. Health Affairs. 2006;25(4):1029-1039.

SESSION: 1-7

Transforming Occupational Medicine

Tee Guidotti, MD, MPH

American College of Occupational and Environmental Medicine and George Washington University

The American College of Occupational and Environmental Medicine (ACOEM) now defines occupational physicians as "public health professionals for the employed population." Since 2002, the leadership of ACOEM has engaged in strategic planning to transform the field of occupational medicine. Three short- and intermediate-term priorities have been adopted for the short- and intermediate-term: excellence in healthcare, health and productivity, and workforce protection. Three major initiatives support these priorities, respectively: the ACOEM Practice Guidelines, the Health and Productivity Toolkit, and our involvement in the national homeland security effort with respect to protecting workers in what is called "critical infrastructure" protection. Workers' compensation reform is essential to progress in occupational health to support the essential framework through which to achieve the goals of quality care, preventing avoidable disability, and early and safe return to work. Specific competencies for practicing occupational physicians have been itemized and newly revised, incorporating population health management skills. A vigorous "Summit" process, with participation by NIOSH, has been launched to propose training requirements and credentialing aligned with the transformed field of practice. Revitalization of traditional priorities in hazard control, prevention, worker protection, and services to underserved populations has been undertaken through a series of new committees and task forces charged with rethinking these issues for the coming era.

Characteristics of the new concept of occupational medicine include a forward-looking medical specialty defined largely by economic relationships and cognitive skills rather than procedural interventions or practice style and driven by changes in employment, economics, and technology rather than biomedical advances. The precedents and role models for this transformation lie in the two traditions in occupational medicine and their historic leaders: the public health tradition exemplified by Alice Hamilton and the enlightened corporate medical tradition exemplified by Harry Mock (a founder of ACOEM), both active in 1916. The "public health" case for occupational medicine based on need and social contribution has lagged behind the business case, which in recent years has shifted from reducing loss to return on investment, especially with respect to productivity. For this reason, ACOEM has placed particular emphasis on making the business case for wellness and a high standard of healthcare.

Response to this new direction on the part of ACOEM has been enthusiastic on the part of its membership. This internal support and a high degree of member participation has allowed ACOEM to be more assertive in pursuing its agenda for the transformation of the field.

SESSION: 1-7

Evaluation of a Work-Life Supervisor Support Training Intervention to Affect Worker Health

Leslie B. Hammer, PhD

Research has suggested that informal supervisory support for work and family can improve worker health outcomes, well-being, and work-family conflict, and is as important as formal workplace policies or supports offered by companies. Studies have also shown that work-family conflict is related to safety outcomes. However, previous studies have typically only measured worker self-reports about general supervisor support. We have developed a behavioral measure that operationalizes what supervisors need to do to help employees manage work and family demands. Using a quasi- experimental field study design, our research links this measure to a supervisor feedback and training intervention in order to enhance managerial competencies in managing work and family. Our preliminary findings indicate that managers who exhibit specific behaviors that are supportive of work and family are perceived as being more supportive than managers who do not exhibit such behaviors. In addition, preliminary analyses indicate that workers who are supervised by these managers experience lower levels of work and family conflict, higher job satisfaction, lower intentions to turnover, and higher reports of mental and physical health.

Design and Implementation of Training

This research is designed to address the hypothesis that training supervisors to perform specific supportive behaviors will improve the health, safety, work, and family well-being of workers based on survey and health indicator measures. A pilot test was conducted to teach and motivate supervisory behaviors that more effectively help employees manage work and family. A computer-based training module preceded face-to-face training that focused on both structural and relational aspects of supporting workers with work and family demands. Supervisor self- monitoring techniques were also taught to document the behaviors and motivate adherence to them. A total of 41 managers participated in the training program.

SESSION: 1-7

Aligning a Comprehensive Wellness Program with Strategic Safety Goals of an Organization

Megan Moeller, MS, ATC, CHES

The University of Iowa

UI Wellness, the faculty and staff health promotion program at the University of Iowa (UI), has had a unique partnership with UI Facilities Management (FM) since 1999. FM consists of approximately 650 employees who manage campus design and construction, maintain and clean buildings and grounds, and provide utilities and energy management to the University. They serve as a pilot group for several UI Wellness initiatives, including a health risk assessment (HRA) and health coach service, implemented campus-wide in 2006. Initially viewed as a silo service, providing bi-annual health screenings, a pre-work stretching program, quarterly shop talks, and regular blood pressure checks, UI Wellness is now an integral partner in the FM Safety Program. Other internal partners include the College of Public Health and Engineering (ergonomics), AFSCME International, Health Protection Office, and Risk Management.

Facilities Management's "Route 66" safety recognition program was an opportunity for UI Wellness to embed itself in the strategic organizational goal of safety. By using a scorecard to record practices such as safety training, incident investigations, hazard observation, communication, and wellness, units within FM get points that move their "cars" along a virtual Route 66 from Chicago to Los Angeles. Using a basic model of tracking metrics and inspired by a spreadsheet originally designed by General Electric, this unique program rewards units for participation. Points from the wellness could be earned by obtaining medical self-care guides for each shop, scheduling quarterly wellness talks, attending a health fair, receiving a flu vaccination, and other health education, awareness, and behavior change programs. Measurable outcomes from 2006, the year Route 66 was implemented, are as follows. Nearly 100% program participation; 78% of units completed the journey. 95.1% of required safety training was completed, compared with 67-78% in previous years. OSHA recordable injuries decreased 33%. The number of lost work days was reduced by 28%. There was a 76% increase in near-miss incidents reported, highlighting the focus on prevention. Hazard assessment checklists are now being reviewed on a monthly basis. Flu vaccinations increased nearly twofold, resulting in an estimated cost-savings of $4,331. Participation in quarterly wellness shop talks averaged 296 in 2005 and 355 in 2006. Health screening results indicated improvements in several health risk areas including blood pressure, cholesterol, blood glucose, smoking, physical activity, stress management, and nutrition behaviors. This data also provided a comparison to the rest of UI in chronic health conditions such as migraines, arthritis, back pain, asthma, and diabetes. Literature supports how these behaviors and conditions impact safety and performance; the integration of Facilities Management data to other UI datasets is still being planned. Also important to note are the observations related to a culture that is much more accepting and proactive related to health and safety efforts.

In 2007, FM is continuing to embed safety and wellness into organizational behavior. This year, FM units have enhanced safety scorecards by tailoring them to their specific work practices. Beyond 2007, FM plans to implement different themes related to the concept such as The Oregon Trial or Big 10 Universities.

SESSION: 1-7

Health Promotion/Health Protection for Multi-Employer Health and Welfare Funds

Laura Welch, MD, FACP, FACOEM

Center to Protect Workers Rights

Although there has been significant development of workplace programs that combine health promotion and health protection, these programs have been concentrated among large employers. We are developing a new and different approach to reach individuals who work intermittently for various employers by working through the multiemployer fund community. There are an estimated 1,760 multiemployer funds in the United States with 25 million covered lives; the majority of these are in the construction industry. These funds are characterized by freedom of choice or providers, indemnity coverage, minimal deductibles or co-pays, and top-of-the-line prescription formularies. Historically they are also characterized by a reluctance to implement incentives or penalties for patients with any specific target disease, limited data system support, both of which lead to a lack of both leadership and financial support for a health promotion/health protection program.

We have developed a program that will provide technical assistance and guidance to participating multiemployer funds in the development of a program initially focused around diabetes. After the pilot phase in the first year we will integrate public health components, and integrate the diabetes program with health protection activities. Diabetes has a major financial impact on these trust funds. We believe that by starting with a program focused on diabetes we will be able to interest the funds, change their reluctance to undertake interventions for members' health and health care, have funds change their benefit design to incorporate the program, develop data support systems, and develop leadership capacity within the funds. Development of this pilot program will then support a larger and more integrated health promotion/health protection program.

We analyzed data from one Health and Welfare Fund with about 7,500 active members; this fund spends about 11.2% of its total health care costs on treatment for the 4.5% of their active members with diabetes, for a total expenditure of $11 million over 5 years on diabetes. We know that screening at risk individuals for diabetes, and providing them with help to delay the onset or control the impact of diabetes through changes in life style, can be effective. Studies have shown that disease progression is slowed and average medical costs are reduced for patients who are part of disease management programs, and that patients with advanced diabetes have fewer complications, fewer emergency room visits and hospital admissions, and shorter lengths of stay per hospital admission if they are enrolled in active case management programs. Several large funds are interested in participating in this new program based on this information.

The program will be formally announced, and will begin recruiting funds, in March 2007. Our goals for the first year include enrolling ten funds with 200,000 covered lives; we estimate this would include 21,000 individuals with diabetes. The program will consist of screening, education, and case management activities. We will present results of the first six months of the program: enrollment, program elements, and lessons learned from the start-up.

SESSION 4-6

Providing Support to New York City Police Officers: Perspectives on Workplace Peer Assistance

Briana Barocas, PhD
Peggy Grauwiler, LCSW, PhD

New York University - Center on Violence and Recovery

Traditionally, police officers have been known to be reluctant to seek assistance for work related stress, and in particular, from mental health professionals (Chamberlin, 2000). The paramilitary structure of police organizations fosters an attitude that views the need for assistance in managing work related stress as a sign of weakness, cowardice, and an admission of incompetence (Miller, 1995). Police peer support programs provide first line assistance and basic crisis intervention to fellow officers (Robinson & Murdoch, 2003). These programs rely on selected, highly-trained, paraprofessionals from within a police organization. Peer programs have been shown to help officers cope more effectively with daily stressors as well as catastrophic events (Chamberlin, 2000). These assistance programs also promote healthy recovery by addressing cumulative work stress on a day-to-day basis (Robinson & Murdoch, 2003). However, the empirical research on police peer support programs remains limited.

This study examined two peer trauma education and support programs used by the New York City Police Department; one is internal to the department and the other is an external program. These assistance programs strive to address both cumulative work related stress and stress in response to traumatic events. Police officer beliefs and attitudes about help seeking and the need for post-event support were examined.

Qualitative or naturalistic methods of research are designed to facilitate the exploration of complex processes. Qualitative methods offer an opportunity to build knowledge about little known phenomena or new systems, and permit exploration of practice and knowledge thereby promoting a deeper understanding of connection and disconnection between the two (Marshall & Rossman, 1999). A phenomenological study using in-depth, semi-structured interviews with uniform members of the NYPD were conducted. 14 interviews with officers who had utilized one of the two available peer programs and 25 interviews with officers who had not used either program were conducted. Additionally, interviews and focus groups were conducted with peer providers and administrative leaders from the two programs. All interviews were audio taped and transcribed. A thematic analysis of the transcripts was conducted using ATLAS ti.

Based on preliminary data from in-depth interviews with police officers, it is clear that there is a need for peer support programs for officers. This finding was consistent among both officers who have used the programs as well as those who have not. Another finding is the importance of a having an assistance program that is truly confidential, and is thus, external to the department. Additionally, the peer providers described the challenges of providing assistance during a critical incident. Finally, the significant role that informal peer support in the workplace plays in buffering the negative effects of traumatic material was identified. These findings have implications for workplace assistance programs for such high risk occupations as law enforcement and other emergency personnel.

These findings suggest the need for theory, training, and assistance paradigms that integrate the complexities of cumulative stress and traumatic events with a specific focus on high risk occupations that promote long term psychological health and well-being.

SESSION: 4-6

The Association of Employer Health Promotion Programs and Worksite Characteristics with Employee Health Behaviors and Health Outcomes

Edmund Becker, PhD

Emory University School of Public Health

Background: Worksite wellness programs are associated with many positive healthcare outcomes: lower health care costs, reduced absenteeism, higher productivity, reduced use of health care benefits, reduced injuries, and increased morale and loyalty. Information on availability of worksite facilities and programs and rates of participation in those programs, however, is limited.

Objectives: We studied: 1) availability of worksite wellness facilities and programs, and 2) association of employee characteristics with both availability of, and participation in, the wellness programs and activities among working age adult enrollees of a group-model MCO in a large metropolitan area. Methods: Data were collected on a mixed mode survey in 2005 of 25-59 year old MCO enrollees employed by large public and private employers in the Atlanta area (N=2,224 of 5,309; 42% response rate). Enrollees were randomly sampled from 3 cohorts defined from MCO databases: diabetes (N=652), elevated lipids without CAD (N=792), and "low risk" (N=780). The survey included items related to worksite characteristics (including availability of worksite wellness programs or activities), patient activation (PAM-13), work climate (MIDUS), and height and weight (for computing BMI). The association of program or activity availability with employee characteristics was assessed by descriptive statistics. Using logistic regression, we estimated likelihood of participation, given availability, as a function of patient activation and work climate, controlling for other employee characteristics.

Summary of Findings: 76.9% of respondents indicated that their worksites had 1 or more programs or activities promoting exercise; 31.6% indicated that their worksites had 1 or more activities related to diet or healthy eating. Employees with diabetes, annual household income < $50,000, or high BMI were less likely to be employed at worksites with programs or facilities supporting exercise or healthy behavior ($p<0.05$). Where available, only 22.1% of respondents participated in a program promoting exercise; 15.5% participated in a program on diet or healthy eating. Patient activation was significantly, positively associated with likelihood of participation in programs or activities related either to exercise or to diet. Work climate was significantly, positively associated with likelihood of participation in programs or activities related to exercise but not to diet. Given availability of programs or activities, there was not difference in likelihood of participation between adults with diabetes, elevated lipids, or low risk adults. Employees who might clinically benefit from availability of wellness programs - notably adults with diabetes or high BMI - were least likely to work where supportive programs or activities were available. Where available, participation in exercise or diet programs and activities was low but did not differ by clinical condition. Participation was primarily affected by employee activation and, for exercise, a worksite with high levels of support and collegiality among coworkers. Community health could be improved from MCO and employer partnerships to increase availability of programs and facilities that support the practice of healthy behaviors. In particular, in areas where the population appears to have greater clinical need, employers and policymakers need to increase efforts to make resources available.

SESSION: 4-6

The Role of Situated Learning and Occupational Safety

David Machles, EdD, MPH, RN

Dimensions in Occupational Health and Safety, Incorporated

The purpose of this study was to understand how learning occupational safety practices occurred for employees outside of and in addition to, what was taught through planned, intentional safety training. The participants reflected upon their personal experiences regarding the work safety practices that they chose to incorporate into their lives during a semi-structured audio taped interview. Data were analyzed using qualitative phenomenological methods to distill the multi-page interview transcriptions into manageable and comparable elements. Theoretical constructs underlying the analysis drew from occupational safety literature and situated learning theories. The analysis found that learning occupational safety practices occurred through experience with equipment and within various environments. These safe work practices were easily transferred to other settings where they were negotiated and became part of the workplace repertoire of safety. The participants did not discern non-workplace and workplace safe practices, but saw safe work practices as a conceptual tool that was applied to all settings. The participants used stories as a vehicle for both learning and sharing safe work practices with co-workers. These stories provided a rich, meaningful way to share safety concepts. The participants learned safe practices through the interaction with co-workers self-selecting mentors who would provide learning opportunities, and they in turn would become mentors for other co-workers. This learning occurred during and within the daily activities of performing their work within their communities of practice.

Given the findings, it is important that more research is conducted in the area of situated learning. By better understanding and leveraging the knowledge that exists within the social network of the workplace safety professionals can use situated learning to enhance safe work practices rather than approaching it as a barrier. Fostering the learning that is already occurring may also increase the transfer of safety well as other skills.

SESSION: 4-6

Designing and Implementing a Self-management Intervention Through a Worksite Wellness Program

Kristin Quitoni, MPH

New York City Department of Health and Mental Hygiene

The New York City Department of Health and Mental Hygiene (NYC DOHMH) Worksite Wellness Initiative, in collaboration with the Cornell University Institute for Health and Productivity Studies, and 7 NYC organizations across 12 worksite locations (with 16,040 employees) are using self-management education as an intervention tool to increase awareness and improve behaviors related to chronic disease risk factors in the worksite setting. The initiative is one component of a three year, intervention study funded by the Centers for Disease Control and Prevention.

This session will provide an overview of a worksite-based self-management program including program development, implementation and programmatic outcomes, such as the number of employees who participated, their demographic characteristics, chronic disease risk factors, and types of goals set. Characteristics of employees who participated in the one-on-one health planning sessions will be compared to the characteristics of those who chose not to take part in the sessions and to those with chronic disease risk factors who did not consent to follow-up.

The aim of the self-management program is to induce positive behavior change in at-risk employees who self report chronic disease risk factors on a Health Risk Assessment (HRA) and who agree to follow-up. The self-management curriculum includes: health education workshops, health promotion packets, and one-on-one health planning sessions. Onsite group workshops and health promotion packets sent to the homes of at-risk individuals who consent to follow-up educate individuals on a number of chronic disease risk factors. One-on-one health planning sessions assist individuals in identifying barriers to improving their health. This individualized coaching also helps individuals formulate mechanisms to overcome barriers, and facilitates goal setting. The content areas covered in the curriculum include: type 2 diabetes, hypertension, smoking cessation, physical activity, nutrition, weight control, and preventive screenings.

The NYC DOHMH mails tailored health promotion packets to homes of at-risk employees. The Worksite Wellness Initiative trains nursing students from area schools to contact the employees by telephone to participate in the one-on-one health planning sessions, and to run the onsite workshops.

Among worksites participating in the self-management program, 3,270 employees completed the HRA between May and September 2005. 1,482 individuals (45%) were found to have chronic disease risk factors and agreed to be contacted. Preliminary findings from the first 574 individuals contacted to participate in the one-on-one health planning sessions show that 262 people (46%) were reached by a nurse. Among them, 184 (70%) chose to participate. Health improvement goals were set by 123 (67%) participants. Among goal-setters, 78% reported meeting their goal. Because interventions are ongoing, findings on all high-risk individuals who consent to participate (1,482 from 2005 HRA and 967 from 2006 HRA) will be reported in September.

SESSION: 4-6

Firefighter Culture and Workplace Fitness

John Staley, MS, Doctoral Candidate

University of North Carolina at Chapel Hill

Background: An extensive body of research demonstrates firefighters are at risk of heart attack, with physical fitness a significant contributor to coronary outcomes. Emergency response places considerable physiological demands on firefighters, including elevated heart rate and oxygen consumption that require high levels of fitness and cardiovascular endurance many firefighters do not possess. Additionally, interventions demonstrate little effectiveness in improving firefighter long term physical fitness. As firefighters are the critical component of our nation's first line response to natural and manmade disasters, in which physiological and psychological rigors require high fitness levels, it is critical to gain more insight into this complex issue. By exploring physical fitness and coronary health from the firefighter's perspective we are filling critical knowledge gaps and serving the practical needs of our community protectors.

Purpose/Objectives: Previous research highlights the unique sociocultural environment and normative influences in firefighting, yet few have examined overall fitness culture. Although fitness is recognized as a critical component of firefighter readiness through national labor-management fitness initiatives, it is uncertain if fitness and readiness expectations translate into practice, i.e., whether fitness is a core value in firefighter culture. Therefore it may be inappropriate to implement behavioral change without first considering the part physical fitness plays in firefighting. This research is informing these critical knowledge gaps by: 1) Determining the cultural meaning of physical fitness, worksite program adherence, and coronary health from the firefighter's perspective, 2) Identifying if fitness norms exist in the absence of mandatory programs, and 3) Ascertaining factors that facilitate overall firefighter fitness.

Approach: Professional firefighters were recruited from four, urban North Carolina fire departments. Guided by a social ecological framework, the basic assumption was made that multiple levels of influence affect firefighter health behaviors, including worksite fitness program adherence. Intrapersonal, interpersonal, and organizational factors primarily influence behavior within this model, and it is assumed an intervention would be most effective targeting multiple worksite factors simultaneously, e.g., individual, crew, and environment. Data was gathered via a three phase, mixed methods design employing qualitative and quantitative methods. Ethnographic informant interviews provided intrapersonal perspectives into the cultural meaning of fitness, program adherence, coronary health, and cultural domains for focus group exploration. Focus groups identified fitness norms and sociocultural factors influencing fitness within firefighting. Emergent hypotheses from the focus groups are now currently guiding a quantitative survey administered to professional firefighters to identify sociocultural factor influence on fitness level, including any correlation between fitness level and normative structural characteristics.

Findings/Future Directions: Key insights into normative and sociocultural factors affecting firefighters are aiding design of a multi-level fitness intervention. Equally beneficial and resulting from this study are concurrent, multi-disciplinary projects supported by local fire chiefs: a nutritional pilot study to develop a nutrition intervention, and a biometric project measuring key physiological/environmental indicators, including blood pressure/heart rate, oxygen consumption, and global positioning, so as to reduce morbidity/mortality outcomes during emergency response. These longitudinal projects are ongoing and enthusiastically supported by our community partners.

SESSION 4-6

Employee Wellness Teams – Sustaining Healthy Work and Healthy Workers

Dawn Weddle, BS, RD

International Truck and Engine Corporation

Vital Lives program at International Truck an Engine Corporation is an employee empowerment initiative that provides a comprehensive, multi-disciplinary, and integrated approach to health and productivity management. These volunteer employee wellness teams run worksite-based initiatives with corporate sponsored programs aimed at targeted populations to address the diverse needs, experiences, and cultures at each location. Launched in 1998 as an ongoing effort to promote healthy living and improve quality of life for all employees, it has evolved into a strategically focused, data-rich program with a proven track record.

The presentation will be a case study on how International's health and promotion practices sustain and improve health. This case study will include discussion of our strategy for engaging senior leadership support, integrating wellness across the health continuum, managing organizational change and ensuring high priority status for employee health and safety. We will summarize our effective evaluation tools including our metrics structure and communication strategies to senior and local management. Our presentation will include lessons learned along the way as well as our outlook for the future.

Our successful approach includes: 1) Visible leadership at all levels of the organization working to achieve key results 2) Integration across the multiple disciplines including safety, medical, and mental health for employees and their families at work and home and 3) Evolution of a culture of good health that is driven and managed by local volunteer wellness teams.

SESSION: 4-7

A Population based Case Study on the Effects of WorkLife factors on Health and Productivity

Jan Pringle, PhD

PPG Industries

PPG Industries Inc (PPG) , operates in 23 countries through several business units and more than 100 worksites and approximately 33,000 employees. Since 2000 PPG has been incrementally implementing an overarching management-employees alliance on health, key components of which comprise an infrastructure of innovative health information management systems. Wellness Checkpoint, a Health Risk Assessment (HRA) which has been administered globally in seven languages, integrates measures of organizational stress, work/life balance, depression and productivity. The HRA has been completed at least once by more than 23,000 individuals. Stress and Work-Life issues have consistently been among the top concerns of participants in different cultures and regions. Due to the concern expressed by employees and the interest of the employer in understating the potential interaction of these matters on productivity, the research has focused on measuring the impact of Stress, Work Life imbalances and Depression on Total Productivity Loss in termes of absenteeism and presenteeism as measured by the Work Limitation Questionnaire.

This original research describes the effects on presenteeism and absenteeism of concomitant multiple risk factors. Further, the study illustrates the influence of stress, depression, and Work-Life imbalance on total productivity loss scores . Economic correlates are calculated for observed productivity loss to assist translating health and productivity management considerations into a business model. Preliminary results at selected sites show that multiple lifestyle risk factors can have a similar impact on productivity loss and absence as multiple chronic conditions. Individuals screened at mild, moderate and severe levels of depression report up to 5 times greater impact of presenteeism and absenteeism as those screened within the normal range and those with known and treated depression reporting less productivity loss than those with screened in moderate and depression range. Similarly, individuals reporting high levels of stress, little satisfaction with work and stress outside of work report levels of presenteeism and absence similar to those with multiple chronic conditions, in some cases up to 8 times higher than those not subject to the same pressures. Change over time data will track flow of risk by individual and by population, evaluating the economic impact of the changes in risk levels and predictors or disease. The session will conclude with a comparison of PPG data against benchmark data for the US and Canada and for multinational employers in similar industries as PPG as well as to other sectors where the demographics and business culture may be quite different to PPG. This comparative view will provide a framework that can be useful in projecting effects of WorkLife factors to employer groups in the US and globally.

SESSION: 4-7

How the Quality and Quantity of Work Changed in Response to an Office Ergonomics Intervention

Kelly DeRango, PhD

DeRango and Associates

This paper presents the economic impact findings from a quasi-experimental ergonomic field study in a mid-sized health insurance provider. Researchers assigned workers into three groups - a control group, a group that received training only and a group that received an ergonomic chair and training. The employees were either a call center workers or bill processors. Call center workers production was measured by calls answered per hour. Billing department workers process dozens of insurance claims a day, deciding not only whether or not the claim should be paid but also how much to pay. Their production was measured by bills processed per hour and by billing accuracy. This breakdown of work quantity (bills per hour) and work quality (billing accuracy) allows us to separate out the effect of the ergonomic intervention on these two separate dimensions of work output. While the chair-with-training intervention did not affect the number of bills processed per hour, we did find that it did increase the number of calls per hour and the accuracy of claims awarded. Both of these effects were statistically significant at the 5% level. The training-only intervention had no measurable effect. We find that the chair-with-training intervention paid for itself in less than a year's time.

SESSION: 4-7

Enhancing Office Worker Health & Productivity Through Integrated Proactive Ergonomics Programs- A Prospective Controlled Study With Policy Implications.

Lennart Dimberg, MD, PhD

The World Bank

The purpose of this evaluation was to determine if establishing an aggressive proactive ergonomics program can provide health and productivity benefits to staff. This study is unique in the ergonomic literature because of the large sample size, longevity of the evaluation and a comparable reference group. The traditional ergonomics program in the World Bank (Bank) and the International Monetary Fund (Fund) included evaluation of work stations upon staff requests, classes for staff with back problems, a web based ergonomics training program, and ergonomic tips published in monthly newsletters. During May-July 2005 about 1,100 staff moved to a new Fund Headquarters building. In addition to new computer equipment and ergonomically designed furniture, a proactive ergonomics program was launched. This program included individual work station assessments for all staff, flyers, email messages, training programs, a video with ergonomic tips, and a stream-lined complaint follow up system. Staff having proactive ergonomic improvements over a longer period of time were compared with staff receiving only traditional ergonomic support services.

Specific purpose and objectives: The goal of this evaluation was to determine if a proactive ergonomics program would reduce health complaints and impact productivity. The investigation focused on associations between work station features, working postures, and musculoskeletal pain symptoms, and eye strain before and after implementation of a proactive program. The outcomes were compared between the intervention and a similar reference group.

Approach: An online confidential survey was designed and validated using previously published questions from existing standardized questionnaires (Nordic questionnaire for the analysis of musculoskeletal symptoms, 5-point Likert scale, OSHA standard), and adapted to fit the characteristics of the investigated population. Staff were invited to complete the same questionnaire at the baseline in 2005, and again after 18 month follow-up period.

Summary of findings and future directions: The baseline survey targeted 2,986 staff in the Fund and 3,404 staff in the Bank. In the base line survey, response rates were 61% and 54%, and in the follow up 44% and 47% respectively.The statistical analysis focused on the 1,291 respondents who completed the survey in both phases of the study. Staff exposed to complete proactive ergonomic program were defined as the first intervention group (359 respondents). Staff who reported having had individual ergonomic assessments upon their request between the two surveys were defined as the second intervention group (124 respondents). Staff exposed to traditional ergonomic program only served as the reference group (808 respondents). Musculoskeletal pain symptoms and eye strain were prevalent in all groups, and associated with a list of demographic and occupational characteristics, as well as with workstation features and work postures. Both intervention groups reported significant reduction of select health symptoms and claimed increased productivity. The results of the study will be implemented as a scientific basis for further improvement of the ergonomic programs in both institutions. Future data analysis may include economic analysis for cost benefits and return on investment calculations based on study findings.

SESSION: 4-7

Energy Corporation of America: A Cohort Assessment of Multiple Health Screenings 2001- 2005

Thomas Drennan, BS

beBetter Networks, Incorporated

Energy Corporation of America (ECA) is the culmination of 40 years of experience in targeting natural gas and oil exploration and development to industrial end users, utility purchasers and other customers. The company values healthier and more productive individuals through their Wellness alliance which embodies the philosophy that the company respects them as individuals and values their health and well being. A worksite wellness program has developed a culture in which employees assume responsibility for their health and seek to improve quality of life by utilizing the opportunities that the company provides them through its wellness programs. Through yearly health screening programs for employees, the knowledge and surveillance of high risk factors allows the company the ability to track the distribution of employee health risks and triage wellness interventions toward reducing medical claims costs.

A cohort evaluation study was undertaken to better understand the progress that has been achieved in reducing both health risks as well as modeled medical claims cost for the Energy Corporation of America's health screening wellness program. A cohort analysis which follows a group or cohort of participants over a period of years was selected to determine a true picture of improvements in individual health risks.

In 2005, a total of 348 employees were participating in the company's health screening program. A cohort study population of 204 ECA health screening participants who had received yearly health screenings was selected to follow participants over a five year time period from 2001 through 2005. Participants completed a lifestyle questionnaire and received a series of clinical tests which combined provided 125 distinctive data elements on each screened individual. Individual yearly risks were determined for cancer, nutrition, fitness, blood pressure, smoking, alcohol consumption, stress, coronary, cholesterol and weight. A frequency distribution of seventeen health risks associated with high medical claims were tracked over the five years and modeled medical claims were developed and compared to baseline costs.

During this period cancer risk decreased 6.7% per year; nutrition risk 11.2%, fitness 11.7%, high blood pressure 14.4%, smoking 10.7%, alcohol 22.9% and stress risks by 17.5%. However coronary risk and cholesterol risk showed no improvement and weight risk increased 1.3% per year. An overall review of seventeen risks associated with high medical claims showed that low risks (0 or 1 risks) increased 2.95% per year, moderate risk (2-3 risks) decreased 1.6% per year, while high risk (4+) decreased 1.35% per year.

Modeled medical claims costs were calculated for the ECA risk profile distribution and a comparison of these to the modeled medical claims representing “no wellness program” resulted in a 19.5% reduction in claims costs as a result of the health screening program.

While significant reductions occurred in health risks and modeled medical claims costs, increases in weight related risks suppressed the gains that have been realized in other health risk areas. Weight management programs are being assessed to address an increased risk related to weight increases.

SESSION: 4-7

Reducing Low Back Pain: Where Do We Go From Here?

Cathy Heaney, PhD, MPH

Stanford University

The problem of low back pain (LBP) has garnered much attention from both occupational safety and health researchers and practitioners. However, LBP still has a lifetime prevalence rate approaching .80 in the US and is a major contributor to occupationally-related disability. The professional literature is riddled with unsuccessful trials of various intervention strategies to reduce LBP.

In order to reduce LBP, both health protection and health promotion expertise are needed. Epidemiological studies , while inconsistent in the details of their findings, have provided firm evidence that personal characteristics of employees, biomechanical aspects of the job, and psychosocial characteristics of work are all risk factors for LBP. The most successful interventions are likely to call upon health promotion expertise in efforts to change employee behaviors and enhance personal resilience to LBP. Health protection expertise is needed to reduce exposure to unnecessary biomechanical and psychosocial job demands.

In this presentation, the results of a recently completed prospective cohort study of LBP among manual material handling employees will be presented. Data was collected from over 400 employees in 9 furniture distribution centers. Baseline data included ergonomic assessments of the biomechanical demands of the jobs, self-reported assessments of the personal characteristics and psychosocial characteristics of work (e.g., workload, role conflict, job control, social support, organizational fairness), and multiple measures of the LBP outcome (well-validated symptom scales, injury reporting on OSHA logs, and a physiological measure of low back functioning using a lumbar motion monitor). All measurements except for the ergonomic job analyses were repeated at six months.

The results of our multivariate longitudinal analyses can be summarized as follows:

(1) The various outcome measures are tapping into different components of LBP;
(2) Different biomechanical job demands and psychosocial work characteristics are predictive of change in LBP across the three outcome measures; and
(3) Different psychosocial work characteristics are predictive of change in LBP depending upon the physical demands of employees' jobs.

The complexity of these results, along with the inconsistencies found in the published literature in this area, strongly suggest that the search for a universally effective intervention strategy is not likely to be successful. Instead, the development of interventions that target specific sub-groups of employees and are tailored to the personal characteristics and work experiences of the targeted sub-groups are needed. A process for developing such targeted and tailored interventions will be described.

SESSION: 4-7

Integrated Disability Management: An Applied Theoretical Approach Resulting in Exceptional Cost Savings and Cost Avoidance

Jill Ladehoff, BSN, RN, MA, COHNS

Evanston Northwestern Healthcare

Evanston Northwestern Healthcare (ENH) was challenged with managing leave of absence, short-term disability, long-term disability, FMLA and Workers' Compensation claims for an organization of approximately 7,000 employees. ENH recognized an opportunity to streamline these functions into an Integrated Disability Management (IDM) Program.

The purpose of integration was to create a single point of entry for claim submission, improve communication, and provide a holistic approach to managing an employee's absence needs while trimming total absence costs.

The approach began by moving all components of the program under one central department. Staff were cross-trained to answer calls, assist with paperwork, provide claim status, and answer other IDM questions. A rigorous case management process was instituted that includes claim review by registered nurses and benchmarking against industry standards. Another successful component to the approach dealt with implementing a pending notification system for FMLA requests.

The findings were significant. By integrating the clinical AND administrative management of the above programs internally, ENH achieved a first year cost savings of more than $700,000. Communication times of the initial communication process were reduced from several weeks or months to only a few days. Through nurse case management, leave of absence days, incidental sick days and workers' compensation days were all significantly reduced. Additionally, the average number of days for continuous leaves of absence decreased substantially in just the first year.

Future directions include a continuation of the highly successful current integration. While the IDM system also features a return-to-work program for those employees sustaining occupational injuries, we are seeking to implement a similar program for non-occupational injury leaves in the near future. We have also launched an employee wellness initiative in recent months and look forward to offering our employees a variety of resources including health risk assessments, work-life balance instruction, monthly seminars, exercise programs and a variety of other resources to encompass physical, emotional, social and spiritual wellness. ENH's Integrated Disability Management Program's philosophy is to anticipate and provide total health management to our employees. We understand the importance of providing our employees with education and resources to support and manage all aspects of their health. Healthy people are more productive members of our workforce, communities and families. It is our goal to keep them or encourage them to be as healthy as possible.

POSTER # 1

Healthy Babies, Healthy Business: A Worksite Health Education Program

Stephen Abelman, MBA

March of Dimes

Background: One half of all births in U.S. are to women in the workplace. In 2005, there were over 500,000 babies born prematurely, before 37 completed weeks of gestation. Prematurity is a major factor in neonatal death and infant illness such as cerebral palsy. The Institute of Medicine estimates the financial burden of prematurity to the U.S. is over $26 billion annually. The cost to employers for a preterm birth alone is approximately $41,610 vs. $2,830 for an uncomplicated full term birth. It is estimated that an employer with 10,000 employees could spend as much as $556,000 in medical, short-term disability, and loss productivity costs associated with preterm birth. There are 14 risk factors such as smoking, diabetes, and obesity that if modified by women before pregnancy or early in pregnancy, could improve pregnancy outcomes.

Solution/Tool: The March of Dimes has created Healthy Babies, Healthy Business, a FREE health education program for employers. The program is comprised of six components (an intranet-based preconception/prenatal content for employees; English and Spanish language Web content; email access to health information specialists; bilingual printed materials; support for parents of preemies; and bereavement support). The information can help employees make better decisions about their health and health care. By encouraging women to use these resources, employers can also promote their own resources such as smoking cessation and EAP programs to address these risk factors and reduce their overall health care costs as well as those associated with premature births.

Results: To date (4/07), the program has been placed in 20 companies. Additional results and evaluation will be presented at the meeting.

POSTER # 2

Heart/Stroke Check: A Worksite Tool for Prevention of Heart Disease and Stroke

Jennifer Alexander, MSW, MPH

Research Triangle Institute

Background: Heart disease and stroke are two of the three leading causes of death in the U.S. The economic toll of heart disease and stroke on America's employees and businesses is staggering: in 2007, the estimated cost for cardiovascular disease in the U.S. is estimated at $438 billion. With 80%of Americans receiving some type of employer-based benefits and services, employers have a keen interest in reducing this burden that cardiovascular disease has on our nation.

Purpose: Accordingly, the Centers for Disease Control and Prevention (CDC)-funded State Heart Disease and Stroke Prevention Program (SHDSPP) is enlisting employers in efforts to prevent and reduce CVD related risks, morbidity, and mortality. To assist in these efforts, an expert workgroup of federal, state, academic, and private sector representatives collaborated to develop Heart/Stroke Check, a tool designed to help employers assess the extent to which they are implementing comprehensive, effective CVD prevention programs. This tool allows employers to inventory the availability of worksite interventions and assess opportunities for heart disease and stroke prevention. Interventions address policy, environmental, and organizational supports and services, including ones that are tailored to reach diverse populations. The instrument is intended to provide detailed information about areas of weakness and opportunities for improvement in worksites. Secondarily, it is hoped that SHDSPP and other key decision makers, employers, and partners will use the data from Heart/Stroke Check to inform decision making and policy development.

Approach: Building on the previously validated Heart Check instrument that assesses worksite interventions for primary prevention (i.e., tobacco control, physical activity, nutrition, stress management), the expert workgroup conducted a literature review and contacted state health departments to identify other worksite surveys that address heart disease and stroke prevention. Through an iterative and collaborative process, the panel identified other domains and questions to insert into the new instrument. In the spring of 2007, we evaluated the Heart/Stroke Check instrument with employers at nine different worksites. During this cognitive testing phase, feedback was sought to modify and further refine the tool.

Findings: Heart/Stroke Check incorporates other domains such as risk reduction and secondary prevention of heart disease and stroke. Domains include the availability of communication that prompts recognition of the signs and symptoms of heart attack and stroke, screening, treatment (such as risk reduction counseling), health education, organizational foundations to promote employee wellness, and emergency response services at the worksite. During this session, we will describe the tool in more detail, and highlight results of the employer evaluation.

Future Directions: Next steps include validating the instrument as well as marketing the tool to SHDSPPs and employer groups nationwide.

POSTER # 3

Collaborating for a Comprehensive Approach to Employee Health: A Pilot Project to Integrate Occupational Health and Worksite Health Promotion

Paige Allen

Healthy Heart Program

The strength of the New York economy depends on a healthy and productive workforce. Employers pay a large portion of direct medical care expenditure costs of unhealthy lifestyle choices, and the known modifiable risk factors that are precursors to heart disease and diabetes have been shown to increase health care costs, absenteeism and presenteeism.

An important target audience for this discussion is workers that are not in management or professional occupations. These workers are often served by occupational health professionals, are more likely to be exposed to hazards on the job and are twice as likely to have two or more lifestyle risk factors such as smoking, high fat diets and sedentary lifestyles. In New York State, there are approximately 5,724,370 employed in occupations other than management or professional. Since these workers spend an average of 40 - 44 hours a week at work, the worksite is an ideal place for developing a healthier workforce.

The Healthy Heart Program of the New York State Department of Health (NYSDOH) has proposed a pilot project with the New York State Occupational Health Clinic Network to build upon their current services to employers and help them offer comprehensive worksite wellness to employers in their region.

The NYSDOH supports seven regional Occupational Health Clinics (OHCs) which provide a unique blend of diagnostic and prevention services for workers with occupational diseases and provides worksite occupational health assessments and services to employers. Key Partners in this project would include the Bureau of Occupational Health at the NYSDOH, the Diabetes Prevention and Control Program at the NYSDOH, the NYS Occupational Health Clinic Network (OHCN), unions and business/industry.

The proposed pilot is unique in that it will be the first time many different stakeholders internal and external to the NYSDOH will come together around a worksite wellness project in New York State. There are three notable strengths of the pilot 1) it complements the existing activities of the stakeholders, 2) the partnership becomes a supply of professional expertise, and has the potential for the OHCN to recognized by employers as an affordable, go-to source for occupational and comprehensive worksite wellness, and 3) there is a mutual desire among stakeholders to improve access to comprehensive preventative services for lower risk employees in addition to comprehensive services for employees with existing chronic conditions. Utilizing the existing OHCN and integrating with DOH internal partners is win-win situation -- the pilot program has the potential to increase the capacity of the occupational health professionals and institutionalize the ways in which workers are exposed to occupational and comprehensive wellness information. It also has revenue-generating potential for the clinics; the pilot would serve as seed money to demonstrate the effectiveness of integrating occupational health and worksite wellness. Since the OHCN are currently flat funded by the DOH, we hope that building the OHCN's capacity, they can actually generate additional income by offering comprehensive worksite wellness to occupational services they provide to employers.

POSTER # 4

Engaging Employees in the 'Rewards' of Healthy Living

Teri Olivier

Humana Innovation Center

This case study presentation will discuss how to engage employees beyond those who are 'healthy and fit' and attract those employees most at risk for driving medical costs. Results from this innovative, activity based health rewards program will drive key learnings around the success achieved from Humana clients using the HealthMiles program from Virgin Life Care.

Learning include improvements in such areas as:
-38% increase in healthy activity level
-23% improvement in blood pressure class
-10% improvement to a healthier body fat class
-21% lowering of BMI by1.5 points or greater.

Discover how a fun and interactive framework provides motivation that engages employees in reaching their health and fitness goals. Hear more about:
-components of an integrated activity/wellness offering
-successful use of rewards-based incentives as motivational drivers for improving health
-workforce engagement across diverse populations
-results tracking to determine ROI.

HealthMiles members track their activity using an unloadable pedometer, tracking step data on their personal member web page, and taking measurements on a health kiosk that also uploads the data to their personal page. Members are rewarded up to $400 per year in rewards for activity, measurement and achievement. Initial program data after one year shows measurable and impressive results which will be shared as part of the presentation.

POSTER # 5

Organization-Level Prevention: An Integral Model for Bringing Evidence-Based Programs to Scale

Joel Bennett, PhD

Organizational Wellness and Learning Systems

Team Awareness (TA) is a psychosocial, and work climate prevention program that has been shown to reduce employee health risks through several research trials (Bennett & Lehman, 2001, 2002; Bennett et al., 2005; Lehman et al., 2003; Patterson, 2006; Reynolds et al, in press). The TA program has been delivered to approximately 5,000 employees across diverse industries and occupations, including the military, municipalities, hospitals, small businesses in construction and service/hospitality, electrical trades, tribal governments, restaurants, and ex-offender work groups. The author has certified over 50 trainers and consulted with diverse organizations for the purpose of adaptation and customization of the TA program to local policies, employee assistance resources, and work culture. Through these experiences, and with action research and focus group methodologies, we have developed an Integral Model of Prevention (TM) to assist organizations in bringing experimental workplace prevention/health promotion programs to scale. This presentation will review the Integral Model, describe its framework, applications, and its potential as a universal tool for bringing science or evidence-based programs to scale in complex organizational environments.

The Integral Model views efforts and strategies to take experimental "evidence-base" health promotion programs to scale as a coordination of four distinct processes. Each process comes to the foreground at different points during the adaptation >> dissemination process. The four processes exist in two pairs. The first pair is: (1) Adaptation (modification of program elements for enculturation and success at local levels), which is juxtaposed with (2) Fidelity (insuring that core principles and program elements are sufficiently preserved). The second pair is: (3) Capacity Building (marketing, efforts at collaboration, sensitivity to organizational readiness, and all relationship building, stakeholder involvement, and social marketing), which is juxtaposed with (4) Prevention Intervention (the actual/final design and delivery of the program as well as associated program evaluation).

The Integral Model does not place primacy on the intervention itself but situates the intervention within the broader organizational context. During the adaptation period, it often occurs that a significant amount of capacity building and attention to fidelity is required. The core assumptions of the Integral Model are that (1) the four processes are part of (integral to) the entire prevention effort and that (2) the enhanced readiness for programming provided by the client-consultant relationship awareness of the four processes improves prevention success.

This presentation will review four case vignettes and describe the Prevention Style Inventory (TM) (PSI), which helps individuals identify their orientation to the four processes. The vignettes include adaptations to (a) small businesses (where TA had to be condensed to 4 hours), (b) electrical workers (where union concerns required a different supervisory component), (c) ex-offenders (entailed a new relapse prevention module), and (d) restaurants (where a new/innovative model was required). A quick demonstration of the PSI (items and dimensions) shows how the four processes are associated with four styles: Adaptation with Innovator; Fidelity with Organizer; Capacity Building with Facilitator; and Intervention with Time Shaper.

POSTER # 6

Health Options at Work: Comprehensive Workplace Health in Action

Audrey Birenbaum

Toronto Public Health

Research studies have demonstrated that the workplace has a powerful effect on employee health. Traditional attempts to create a healthy workplace have focused on the safety of the physical environment, disability management and injury prevention. Recently, programs have been designed to encourage healthy individual behaviours by providing support, information and skill building. While health and safety and lifestyle programs are important contributors to the overall health of employees, current evidence shows that workplace health promotion programs are more effective when a comprehensive approach is used. A Comprehensive approach acknowledges the many factors that influence health such as individual health practices and behaviours, organizational culture and occupational health and safety.

The development of strategic plans and sustainable strategies that focus on organizational change, rather than one-shot programming, will contribute to a healthy high performing workforce. This shift in approach requires commitment from all levels of the organization to ensure success.

Toronto Public Health has been working with organizations to create healthy, high performing workforces through collaborative implementation of Comprehensive Workplace Health (CWH) strategies.

POSTER # 7

Healthy People 2010: Are Employers Achieving the National Worksite Health Promotion Objectives

Carter Blakey

U.S. Department of Health and Human Services

HHS collaborated with Partnership for Prevention, Watson Wyatt World Wide and the University of North Carolina (Chapel Hill) to assess employers' development and use of worksite health promotion programs. The assessment evaluated worksite health promotion programs, policies, and priorities in both Federal and private worksite settings. A goal of this assessment was to determine the extent to which worksite health promotion programs are in place and are being used. One of the President's HealthierU.S. Initiative's primary goals is “to improve the efficiency and coordination of Federal policies related to personal fitness of the general public.” Most workers spend a third of each workday in their place of employment. Thus, the workplace represents a valuable opportunity for promoting healthy behaviors and lifestyles as well as for offering preventive health services. Several Healthy People 2010 objectives specifically address comprehensive worksite health promotion programs. Healthy People 2010 objectives aim for 75% of worksites (regardless of size) offering a comprehensive worksite health promotion program. Results: Worksites with 750+ employees consistently reported offering greater proportions of programs, policies, services and supportive environments. Only 6.9% of responding worksites offered a comprehensive worksite health promotion program. Worksites with a dedicated staff person and 750+ employees had significantly greater odds of offering a comprehensive program; while worksites in agriculture/mining or financial services were significantly less likely than other industry sectors to offer a comprehensive program. Conclusions: Increasing the number, quality and type of health promotion programs and supports at work, especially among smaller worksites, remains an important public health imperative.

POSTER # 8

Protecting Hospital Caregivers with Safe Patient Handling

Natalie Campaneria, BSPT, CEES

Baptist Health South Florida

Nursing is a physically demanding job. One study illustrated that during an eight hour shift, the cumulative weight lifted by a nurse is equivalent to 1.8 tons. Estimates report that 12 % of nurses leave the profession annually as a result of back injuries, and more than 52 % complain of chronic back pain. Nursing personnel among the highest at risk for MSD's, with nursing aides and attendants ranking 1st (ahead of truck drivers and laborers) and RNs 6th of at-risk occupations for strains and sprains.
In September 2003, American Nurses Association introduced the “Handle with Care” campaign. The ANA's intention is to secure a nationwide "no-lifting" policy. Several states have passed bills, or are in the process of hearing bills related to patient handling safety to protect medical caregivers.

Baptist Health South Florida (BHSF) is the region's most-preferred not-for-profit healthcare organization and largest private employer. We have over 11,000 employees, with the average nursing age at 47 years old (and increasing).

In 2002 the ergonomics department at Baptist Health identified that patient handling injuries posed our greatest risk for repetitive strain injuries. A focus group was appointed to explore options to address this. In 2004 BHSF Leadership took a bold step and invested approximately $2.5 million for lift equipment and clinical support and training for every area of the hospitals that require manual transfers or lifting of patients. The prime purpose of this program is to prevent caregiver injuries while performing patient transfer and mobility tasks. With the aging work force, and nursing shortage in healthcare today, this becomes critically important to keep staff healthy and able to safely perform their job tasks. While staff safety is the primary goal, patient safety is enhanced as well by reducing the chance of patient injury associated with a fall that could occur when a staff member is injured.
Several pieces of equipment are available for use based on the mobility status of the patient. We also utilize friction reducing lateral transfer devices allowing for safe transfer without employee strain or injury. Under the recommendation of our CNO's, we decided to implement the project in phases due to the large size of our health system.The program implementation began in March of 2005 and was completed in January of 2007. Every nursing unit at each hospital was assessed for equipment needs. Equipment was allocated based on the type of patients served and the tasks associated with caring for them. Caregivers assigned to units using the equipment have attended mandatory training in the use of the lift equipment.

Impact and outcomes: BHSF has had significant reductions in Workers Compensation costs. At the 2 hospitals where minimal lift was implemented for the majority of 2006 there was a 92% reduction in WC costs 2004 to 2006 for cases related to patient handling. Additionally, we have seen a 90% Reduction of Lost Work Days and a 94% Reduction of Restricted Duty Work Days at these same hospitals. Nursing satisfaction scores related to patient handling have increased.

POSTER # 9

From Punitive to Positive: Engaging Employees in Drug-Free Workplace Efforts

Elena Carr

U.S. Department of Labor

By educating about the dangers of alcohol and drug abuse and supporting workers with alcohol and drug problems, drug-free workplace programs can play a powerful role in promoting employee health and wellness. Historically, however, such programs have been viewed as disciplinary, focusing mainly on drug testing and frequently the termination of workers with drug problems. As a result, many employees, often through the collective voice of labor unions, have resisted unilateral implementation of programs in an effort to protect workers' jobs and livelihoods.

Today, a change is underway to reposition drug-free workplace programs within the larger context of employee health and wellness, to the benefit of all concerned. Organizations are discovering that a proactive approach to employee substance abuse that emphasizes prevention rather than punishment begets indirect benefits such as decreased absenteeism and health benefit utilization and increased productivity and employee morale - results agreeable to employers and employee alike. A testament to this paradigm shift is the fact that some labor unions are actually partnering with employers to administer drug testing to their own members, recognizing that doing so not only puts their members at a competitive advantage, but also promotes their health and well-being.

With members representing both employers and employees, the U.S. Department of Labor's Drug-Free Workplace Alliance works to promote a mutually beneficial approach to workplace substance abuse in the construction industry, which is among the industries with the highest rates of worker substance abuse. Together, the Alliance's eight unions and five employer associations raise awareness, identify and share best practices, and serve in a consultative capacity to DOL in its development of substance abuse training and educational resources.

The purpose of this presentation is to help attendees mitigate resistance to drug testing in their organizations by making worker health a priority and transforming drug-free workplace programs to recognize substance abuse as the health issue that it is. It describes positive, proactive approaches to addressing employee substance abuse, including those practiced by members of the Drug-Free Workplace Alliance, and explores strategies for communicating to employees how drug-free workplace programs integrate with other initiatives to preserve and promote worker health. Practices highlighted include new employee training curricula and easy-to-implement promotional activities. Future Drug-Free Workplace Alliance plans for communicating the health benefits of drug-free workplace programs that can be emulated by organizations in all industries will also be discussed, including national Drug-Free Work Week 2007.

POSTER # 10

Multi-Level Issues in Understanding Hotel Work and Family Interfaces: Avenues for Intervention

Jeanette Cleveland, MS, PhD

Pennsylvania State University

The hotel industry exemplifies many of the dimensions that characterize modern workplaces, including high levels of turnover, long, often irregular hours, high levels of guest contact that are often stressful and require emotion management, and an organizational culture emphasizing a high level of face time. These features make it difficult to balance work and life off the job. The NIOSH oral presentation describes a research program intended to provide a foundation for collaborative organizational and individual level intervention and evaluation of the effects of family-friendly policies on the health of employees, their families and on the productivity of workers and the employer's "bottom line".

An interdisciplinary research project at Penn State is described reflecting a multilevel approach to assessing work and family linkages including assessments of organizational, leadership, and job characteristics as well as both perceived and biological indicators of stress within the hotel industry. The multi-method approach focuses on different levels of the industry ranging from corporate executives to hourly workers. Specifically, we use qualitative interviews and quantitative surveys of corporate executives and general managers (GMs); telephone surveys with department managers (DM) (e.g., food and beverage, rooms, sales, HR) and, where applicable, their spouses/partners; a series of daily diary telephone interviews with DMs and spouses; and, yoked to the daily diaries, the collection of biomarker data, (e.g. cortisol and DHEA-S, two stress hormones). The presentation will focus on the extensive work-related data and where appropriate, family and home characteristics that we have gathered and on hotel employees' health and work performance broadly defined.

The core of our study is the investigation of the work and family lives of 526 department managers whom we recruited from 37 full-service hotels across the U.S. The focus is on full-service because it enabled us to use multilevel models in which department managers are "nested" in hotels-a statistical approach that make full use of the strengths of our data. Our presentation will focus on the department managers and, where applicable, their spouses (n = 178).

In each hotel, we interviewed the GM and then contacted DMs for participation in a one-hour telephone survey. We were interested in how GM leadership styles and attitudes might permeate the hotel and thus be connected to the health and well-being of their managers. The daily diary data address similar issues but the entire focus is on the manager's (or spouse's) experiences on 8 specific days. Here we focus on intraindividual patterns in the links between stressful (and positive) work experiences and physical symptoms, emotions, and health behavior on a daily basis.

Drawing from these data along with multi-source perceptions of work and stress, we will ultimately develop a rationale for introducing formal and informal workplace policies and practices that make it more feasible for managers and employees to flexibly handle their work and non-work roles, reduce stress and, in so doing, improve health.

POSTER # 11

Migrant Adolescent WorkLife Study

Sharon Cooper, PhD

Texas A&M School of Rural Public Health

Despite a national crisis of increased prevalence of obesity and Type II diabetes in adolescents, especially among Hispanics, there are little or no published data on chronic disease indicators in the vulnerable population of migrant farmworker adolescents. To further address the gap in the literature, we are conducting a 5-year NIOSH-funded study (2006-2011) that combines cross-sectional and prospective cohort designs to examine the prevalence of and risk factors for hypertension, overweight, hyperinsulemia, and back symptoms in students from two South Texas high schools along the Texas/Mexico border. This design strategy allows us to collect sorely needed data on modifiable risk factors in young farmworkers, and to compare migrant farmworker with other Hispanic students on the prevalence and incidence of chronic disease indicators. The ultimate goal of this research is to transfer our findings to comprehensive interventions that include policy changes to prevent the occurrence of chronic diseases and back symptoms, conditions of enormous public health significance with onset in childhood. This study follows NIOSH's WorkLife Initiative by focusing on a group of at-risk adolescents, and seeking a better understanding of how occupational and lifestyle factors jointly influence health. By study's end, participants for this study will include approximately 500 high school students 14-17 years of age in two high schools in Hidalgo County where 26% of the population reports a Latin American birthplace. For the first two years, all ninth-grade migrant education students and an equal number of randomly-selected ninth-grade non-migrant education students from the same high schools are being recruited. Longitudinal examination of these students will continue for each of the remaining 2-3 years, until graduation or loss to follow-up. Along with physical examinations, we are administering a questionnaire to solicit information on health risk behaviors, demographics, acculturation, depression, food habits, health care utilization, work history, and physical activity of a cohort of Hispanic adolescents. We completed the first year of data collection in April 2007. Among 376 sampled students who were eligible for the study, 275 participated (73%) following parental consent and child assent. Among these, 150 were migrant education students and 125 were nonmigrant students. Males comprised 49% of the sample and females, 51%. Initial data analyses comparing migrant education with other students show a prevalence of 26.7% vs. 26.4% for acanthosis nigricans (AN, a marker of hyperinsulemia); and 28.7% vs. 23.8% for high normal or high blood pressure (>90th percentile for age, height, and gender). By gender, the prevalence of AN was 24.6% for males and 28.4% for females. The prevalence of high normal or high blood pressure was 32.0% for males and 17.7% for females. Data entry, cleaning, and further analyses are in progress for these and other clinical indicators of chronic disease and antecedent risk factors. However, preliminary results suggest a compelling need for a comprehensive intervention to prevent significant chronic disease in this high-risk Hispanic adolescent population.

POSTER # 12

Commercial Vehicle Driver Fitness For Duty: Driving with Limb Amputations and Impairments

Teresa Doggett

U.S. Department of Transportation

The United States Congress has historically mandated that DOT provide an opportunity for commercial motor vehicle (CMV) drivers with limb impairments, who cannot meet Federal fitness for duty standards, to apply for evaluation on a case-by-case basis. The legal basis, history and current state of this program will be presented, using descriptive and advanced methods to analyze medical diagnoses and safety outcomes (fatal and injury crashes). DOT provides a standard set of requirements for limb-impaired and limb-amputee drivers (including paraplegics) who operate CMVs in interstate commerce.

Requirements include 3 measurements:
1) prescreening review (application, traffic record, license check, other data), 2) medical driver (health status) review & (3) skill performance tests of off/on-road maneuverability. Applicants are required to demonstrate these skills on highway CMV road tests. There are currently >3,400 drivers on American roads in this program, and there has been no analysis or public presentation of these data in the United States in > 25 years.

Of these drivers, 99% are male and age ranges from 21 to 87 years (mean = 50 years, median = 47 years). The drivers represent an aging workforce, with >70% being ages 40 to 69 years. The majority (69%) of amputations/limb disabilities are lower. There are program drivers with paraplegia and multiple limb loss. More detail about the causes/diagnoses of the amputations and impairments will be discussed, as well as the safety data monitored. The changes in the Government's program in progress at this time will be presented, including the potential impact of war-time injuries on new truck and bus drivers entering America's transportation workforce.

The Medical program website is:
http://www.fmcsa.dot.gov/rules-regulations/topics/medical/

POSTER # 13

Building a Culture of Safety and Health through Integrated Safety and Health Management System with Zero Accident Program Framework

Bernadette Evangelista-Alvarez, ChE

Amkor Technology

The Integrated Safety and Health Management System with Zero Accident Program(ZAP) framework is not just a mere Occupational Safety and Health (OSH) compliance program nor an advocacy but also as an important tool to build a culture of safety and health. This program's primary goal is to establish the link between safety and health programs including environment with productivity as one of the indices. It also aims to identify and determine the various factors and variables contributing to the success of the company's safety and health program and their effects to its overall productivity and more so to the employee culture towards OSH.

The integrated OSH management system is implemented through programs committed to the protection of the environment and the health & safety of workers and meeting all applicable environment, health and safety laws, regulations and other requirements the company subscribes to. The programs also recognize that by integrating sound environment, health and safety management practices into all aspects of the company processes and activities, technologically competitive products can be offered while conserving and enhancing resources for future generations. Continual improvement in our environment, health and safety management systems supported elimination of accidents, occupational injuries and workplace thereby creating a culture of safety and health.

The subject of the research is a 2-time winner of the Gawad Kaligtasan at Kalusugan Award, a national award for safety health given by country's Department of Labor and Employment. OSH programs presented would showcase linked safety and health programs including environment and productivity using integrated OSH and environment management system (ISO 14001, OHSAS 18001, ZAP) fully supported by combined effort of safety and health practitioners and workers with strong management support.

POSTER # 14

A Worksite Readiness Checklist for Participatory Worksite Ergonomics and Health Promotion Programs

Pouran Faghri, MD, MS

University of Connecticut

Background: High-demand jobs, with inadequate application of ergonomic principles to the design of the workplace and with little decision latitude for employees, appear to have significant impact on cardiovascular as well as musculoskeletal health. he organizational structure of work has been identified as a major contributor to employee health behaviors, such as physical activity, eating habits and smoking. Social support by both supervisor and co-workers also has an impact by buffering these exposures to decrease stress level and possibly related cardiovascular disease.

In this project, as a component of the Center for Promoting Health in the New England Workplace (CPH-NEW), we propose to develop a worksite readiness checklist (WRCL) for assessment of conditions relevant to integration of participatory workplace health and safety and worksite health promotion programs (WHS+WHP). The purpose of the WRCL is to evaluate the management, employees, and organization for their level of readiness for successful program implementation and provide feedback to the worksite with an action plan based on the results of the checklist.

Objectives:

1. To develop a WRCL for integrated assessment of ergonomic exposures, health-relevant conditions, and health promotion activity at work;
2. To utilize the results of the WRCL in developing an action plan specific to the worksite;
3. To assist employees in identifying and prioritizing participatory WHS+WHP activities for implementation at work.

Approaches: Most organizations assume that implementation of WHP is costly, and time intensive and they doubt the sufficiency of human resources and funds. As a result institutional motivation and self-efficacy are often low. However, with technical support and continuous assistance, feasible programs could be developed while including a participatory approach that engages both management and the workforce. Accordingly, reinforcement and feedback are necessary for employees and management.

The WRCL will have three assessment components, 1) management readiness and support, 2) employee readiness including employees health risk assessment), and 3) organizational, physical and psychosocial conditions that affect employee health. Based on a scoring system an easily understood and feasible action plan can be developed for an organization that includes menus of feasible WHS+WHP program options, in part based on employee recommendations for programmatic interventions.
It must provide systematic, comprehensive and concrete information and knowledge on available resources, identify and disseminate good practices, and provide personnel with expertise to facilitate the planning and activities. The action plan will be multi dimensional to encourage company's voluntary initiatives into various areas of WHS+WHP. It will provide basic knowledge, list of available resources to increase motivation and self-efficacy, and will provide examples of good practices.

Summary: To be successful, health promotion programs must be matched to an organization's resources during the early stages of implementation. In improving employees' heath, the integration of workplace safety and health ergonomic principles and health promoting activities are hypothesized to provide more successful outcomes. It is also important that this integrative process pay adequate attention to assisting employees by increasing their self efficacy so they actively participate in changing the worksite and their lifestyle choices.

POSTER # 15

Partnering to Promote Employed Caregiver Well-being: An Overview of Eldercare Services at George Mason University, a Joint Program of Human Resources and the College of Health and Human Services

Nancy Falk, Doctoral Candidate, MBA, BSN

Eldercare Services, George Mason University

Broad context, background, and importance: Employees and employers in 2007 and beyond face new challenges in the workplace and workforce. The National Alliance for Caregiving estimates that 59% of caregivers are employed or have been employed while providing care (National Alliance for Caregiving in collaboration with AARP, 2004). The size of the 85 years and above age group is increasing and employed caregivers face the challenges of caring for family members while balancing work and career. With caregiving responsibilities, employees face health, well-being, and work/life balance issues. Employers face workforce challenges related to retention and productivity. Faced with an aging population and workforce, and faculty and staff in their mid 40s, on average, George Mason University embarked on development and growth of an Eldercare Services program to proactively address the noted challenges.

Specific Purpose and Objectives: The purpose of this presentation is to provide insight into the development and rollout of the George Mason University, Eldercare Service program, from May 2006-September 2007. The presentation will discuss the challenges and opportunities of building and sustaining an Eldercare benefit at a major academic institution.

Approach: George Mason University, a major public institution in the Commonwealth of Virginia enrolls over 29,000 students in Fairfax, Prince William, and Arlington counties. George Mason University, Eldercare Services, is a free employee benefit established to promote employee and family wellness, workforce productivity, and balance between work life and personal life for faculty and staff caring for elder family members. The service is a partnership between the Human Resources and Payroll Department and the College of Health and Human Services and has been developed and supported by human resource experts in work/life balance and aging specialists with expertise in practice and research. Eldercare service components include consultation, resource and referral, and educational seminars designed to foster well-being of caregivers and elder family members.

Summary of findings and future directions: September 2007 marks the one-year anniversary of the rollout of the program. Program challenges and opportunities will be discussed, including program start-up on a shoestring budget, partnering tips, program development and sustainability with student labor, and eldercare learning opportunities for students from many disciplines, including nursing, social work, and information technology. Our vision for year two and beyond will be included.

POSTER # 16

Health Disparities and U.S. Workers

Lora Fleming

University of Miami, Miller School of Medicine

Background: Reduction of health disparities is a key objective of the U.S. Healthy People 2010: "to eliminate health disparities among segments of the population including differences that occur by gender, race or ethnicity, geographic location, or sexual orientation"; however, occupation has not been identified as a significant factor in health disparities.

Purpose: Using a large nationally representative database of all U.S. workers, the investigators are evaluating health disparities among all U.S. workers, particularly among poor and minority worker subpopulations.

Approach: The National Health Interview Survey (NHIS) is a household survey of the U.S. population conducted annually since 1957. The NHIS has collected demographic, health, and employment data on over 661,000 U.S. workers > 18 years representing 130,000,000 U.S. workers annually from a sample of the entire U.S. population from 1986-2005 with mortality follow up through 2002.

Results: In general, our occupational health disparities research can be summarized as: poorer, less educated workers, particularly workers in minority subpopulations, are at a major disadvantage in terms of their health and their resources in the U.S.

Since 1986, obesity rates have increased significantly among U.S. workers, particularly among black women workers and many blue collar worker groups (e.g. 32% motor vehicle operators). Leisure-time physical activity levels were sub-optimal among all major U.S. worker groups with the lowest rates noted in blue collar groups (e.g. 18% female equipment operators). Cigarette smoking remains very high in blue-collar workers (e.g. 58% roofers) without significant decrease over time, while white-collar workers report lower rates (e.g. 4% physicians) with corresponding significant downward trends. Yet these same blue collar workers are also less likely to have health insurance with a downward trend from 1997-2003 (e.g. Construction workers went from 64% to 55%).

Among blue collar and minority workers, morbidity and mortality rates tend to be higher, and yet preventive health interventions tend to be lower. Compared to all other workers, female protective service workers had a 1.8 times increased heart disease mortality risk and male service workers had a 1.3 times increased stroke risk. Female farm workers had a 2.2 times colon cancer mortality risk for colon cancer mortality, female machine operators 1.6 times for cervical cancer, and male laborers 1.6 times increase for prostate cancer. In 2000, despite increased rates of cancer prevention screening in the U.S., Hispanic workers were less likely to report colorectal screening (24% vs 32%). Compared to all workers, black men workers were less likely to report a PSA in the past year (64% vs 67%). Hispanic women workers were less likely to report ever having a pap smear (85% vs 95%) and a mammogram (78% vs 87%). Nor have these health screening disparities improved using the 2005 NHIS data.

Summary: In addition to the value of these surveillance data in monitoring the health and resources of all U.S. workers over time, these analyses demonstrate the need for a range of effective targeted prevention strategies to improve the health of blue-collar and minority U.S. workers and their families.

POSTER # 17

8-hour and 12-Hour Shifts and the Affects on Employees

James Ford, Jr., MA, PhD

The College of Saint Elizabeth

Backgound: Specific Purpose: Shiftwork affects employees in a number of areas, especially those that may affect their health, job performance, job satisfaction, and family life. The vast majority of police officers work a variety of shift schedules. The practice of public safety involves the deployment of human resources to meet the needs of human beings who have specific needs for service. Such demands for service often involve exigent circumstances, significant stress, and the expectation for clarity of thought when making such decisions of importance. The basis for conducting the study was to determine the physiological and psychological effects of working the 12-hour shift. The communities which employ these officers have a vested interest in the officer's careers, both in financial terms and in terms of expectations for service. Police work is a career choice and a profession that requires unique dedication and a commitment to service. The community has an interest in the officer to assure that they are the best trained and that they are satisfied with their job. Such an obligation and concern returns benefit to the community at large because the symbiotic relationship enables the officers to be more vigilant and responsive to the needs of the community. Police work is not the only profession which necessitates its employees to work shift work. There are many professions which utilize various shift work hours and schedules such as nursing, air-traffic controllers, nuclear plant workers and other fields.

Approach: The methodology chosen for the study was quantitative based on survey research. While the study was quantitative in nature it used descriptive and inferential statistics. The study focused on cluster sampling of municipal police departments in Morris County, New Jersey. The study focused on officers who worked either the 8-hour or 12-hour shifts. Shiftwork can have physiological, psychological and social effects on a person such as stress of shiftwork, cardiovascular, gastrointestinal to name a few.

Three research questions were utilized in the study:

1) Is there a significant difference in social and domestic situations between police officers working the 12-hour shift compared to the 8-hour shift?
2) Is there a significant difference with health related issues between police officers working the 12-hour shift compared to the 8-hour shift? And
3) Is there a significant difference in job satisfaction between police officers working the 12 hour shift compared to the 8-hour shift?

The SSI (Standard Shiftwork Index) is a battery of questionnaires and was used to assess shift work related problems. The SSI has been used internationally. It is comprised of a comprehensive collection of standardize scales that could be used to contrast groups of shift works working on different shifts and schedules.

Summary: Further research is needed to examine shift work and its affects on employees. The study enables various agencies to compare and contrast the available variables and discern from the reported outcomes, what is the most suitable alternative for possible implementation in their work environment.

POSTER # 18

Application of NIOSH Model Ergonomics Program in a Specialty Hospital

Manny Halpern

Occupational and Industrial Orthopaedic Center

The purpose of the pilot project was to apply the NIOSH model for setting up an ergonomic program and examine its relevance to one department at a specialty hospital.

As the injury data of the hospital could not help identify targets for intervention. Consequently, the pilot was introduced at the Pathology & Laboratories, where management was willing to host it. The department has 28 employees, the majority comprises technical staff (lab technicians and pathologists), and the rest administrative/clerical. Since all staff is increasingly using Video Display Terminals (VDT), the focus of the ergonomic program was declared as Healthy Computing. The content could serve as a model to other VDT users in the hospital.

A symptoms survey that was distributed during three kick-off meetings revealed that 68% of the respondents complained of musculoskeletal symptoms in the last 12 months, only 5 sought medical care and 3 lost work time (wrist/hand problems).

Two staff members were assigned to act as an ergonomic task force that would assist the investigator. The task force met 5 times within a two-month period.

A VDT checklist was used to assess the design of all computer workstations. Nineteen design deficiencies emerged as common to more than 70% of the 16 stations. The observations served to construct context-specific examples in 4 one-hour training sessions for 23 staff members. The investigator and the task force developed a list of 12 products that address the common design deficiencies. The products were prioritized, whereby flat LCD screens for the lab, chairs, stools and back cushions topped the list. The products were selected from a list of vendors currently doing business with the hospital.

The pilot program identified 11 process outcomes to document the performance. Five barriers have been identified that may limit its long term effects, and 3 factors may act as facilitators. Altogether, out of 41 items listed in NIOSH model ergonomics program, 30 (73%) applied to a hospital environment.

The employee kick-off meetings revealed one additional concern: awkwardness in drawing blood from patients in the phlebotomy lab. While the NIOSH ergonomic program focuses on prevention of musculoskeletal disorders, it became evident that in health care facilities, ergonomic issues need to consider the relationship between employee and patient safety. The team decided to separate this from the present pilot program and submit to the hospital a separate request for a follow up study.

POSTER # 19

Effective Employee Engagement in Personal Health Improvement-Reaching the Hard-to-Reach

Katherine Hamlin

Health Fitness Corporation

Broad context, background and importance: Health Fitness Corporation (HFC), a provider of integrated health management solutions, has partnered with Duke University and Medical Center since 1988 and with The Mosiac Company since 2005. Both employers look to improve the health and productivity of their employees by engaging employees in personal health improvement.

Duke University has an employee population of 26,000, and the average tenure of its employees is more than 10 years, equating to long-term health care costs for any unhealthy employee. In 2000, Duke launched a coaching program targeted to those with high blood pressure, high cholesterol, and who are pre-diabetic. To date, more than 2,000 employees have participated.

Mosiac, an international crop nutrient producing company, has approximately 3,000 employees, of which 89% are male with an average age of 48 years. Many employees work in locations away from their worksites including draglines in the mines and other field occupations. A high percentage of the primarily male and aging workforce possesses numerous health-related risks including overweight/obesity, tobacco use and physical inactivity.

Specific purpose and objectives: At both employers the goal is to engage employees in becoming proactive with improving or maintaining their health. At Duke, the coaching program was established to help employees with identified health risks change behaviors and improve their health and well-being. At Mosiac, the initial objectives for the program were to create awareness of healthy lifestyles, create an environment supporting health behavior change and provide on-site opportunities for participation in health programs such as preventive health screenings and fitness activities. In both experiences, programs have been tailored to reach the hard-to-reach with mobile services and face-to-face engagement strategies.

Approach: At Duke, at-risk employees can opt into the health coaching program and receive coaching once a month for one year. The role of the coach is to partner with employees and focus on healthy eating, physical activity and stress management, as ways to reduce their risk factors. Mobile screening services are provided to reach faculty, staff and medical personnel across the university and health system.

At Mosiac, a health promotion practitioner visits the employee work areas to provide health education and promote upcoming health-related events. Employees are educated about their health risks through on-site preventive health screens for cancer, hyperlipidemia, hypertension, osteoporosis, and hepatitis C. Exercise facilities are available at seven Mosaic locations and a pedometer walking program is available for employees.

Summary of findings: At Duke, 89% of blood pressure participants reduced their risk and 85% of cholesterol participants reduced their risk. These reductions in risk factors significantly reduced Duke's health care costs. For example, the average annual health care cost for a health coaching participant with elevated blood pressure was 20% less than for a non-HFC coaching participant.

At Mosiac, more than 80% of the population has participated in one or more lifestyle management programs with some years as high as 90%. Participants' and management's satisfaction with the programs exceeds industry averages.

POSTER # 20

From Chaos to Calm: Undertanding Moments of Crisis

Terri Howard

Crisis Prevention Institute, Incorporated

When a person endures a critical moment of crisis, one of three outcomes awaits. The situation will become worse, stay the same or improve. You can be the catalyst to chaos or the conduit to calm. We will look at proactive approaches to be better prepared for the next possible crisis situation. This presentation will highlight tools to assist professionals organize their thinking in such a moment; understand the powerful impact of their own behavior on those in crisis; be more sensitive to those early warning signs of crisis; elicit underlying factors that lead to the episode; and problem solve after an incident to create opportunities for learning and growth.

This presentation will provide examples of strategies for employees that intervene with individuals who demonstrate challenging, non-compliant, confrontational, aggressive and potentially out-of-control behavior. In a moment of crisis, staff can become a catalyst to chaos or a conduit to calm. The presentation will highlight strategies from the Crisis Prevention Institute's PrepareTraining® Program.

POSTER # 21

Adaptation of a Participatory Ergonomics Framework for Actively Engaging Workers in the Design of Health Promotion Programs

Robert Henning, MS, PhD

University of Connecticut

Background: The Center for Promotion of Health in the New England Workplace (CPH-NEW) is currently developing and preparing to test new methods for actively involving employees in the design of workplace-based health promotion programs. Although participatory ergonomics is conventionally used to involve workers in design efforts to reduce work-related musculoskeletal disorders in the workplace, we believe participatory ergonomics can be adapted to focus more broadly on health promotion as well as a wide spectrum of workplace hazards. In this adapted approach, worker efforts will focus on both the design/redesign of organizational aspects of work as well as health promotion initiatives; for example adjusting work scheduling to foster regular walking activity throughout the workday. With this emphasis on integrated design efforts, what can be referred to as a participatory macroergonomics approach is expected to provide important benefits: 1) workers receive special skills training through combining techniques of macroergonomic design with health promotion that could benefit workers both inside and outside of the workplace, 2) increased worker motivation due to increased control, ownership and buy-in, 3) increased overall effectiveness of health promotion efforts, and 4) greater program sustainability.

Purpose and Objectives: We are currently exploring the feasibility of adapting a participatory ergonomics framework as a method of engaging workers in an iterative approach to designing, testing and implementing health promotion initiatives integrated with work organization.

Approach: As participatory macroergonomics is defined here, workers function as subject-matter experts empowered to engage in the analysis and iterative design/redesign of work organization characteristics until health promotion initiatives become successful. Initial key steps in the proposed approach include using a checklist to assess organizational readiness for participatory design efforts by workers because it is well known that management support is crucial to the success of participatory ergonomics programs which necessarily involve shared decision-making with management about the design/redesign of work organization. Simultaneously, a health promotion checklist (see Faghri et al., this conference) is used for the identification of those health promotion initiatives at a specific workplace that have high potential for being beneficial to worker health and which are financially feasible. Using findings from both checklists and a participatory ergonomics framework as a guide, workers will then be trained using an optimal combination of health promotion concepts and macroergonomic design principles that are expected to have a synergistic effect on a worker's ability to engage in the iterative design of health promotion programs which are integrated into the workplace. And finally, the Employee Perceptions of Participatory Ergonomics Questionnaire developed by University of Connecticut researchers is administered on a regular basis to evaluate five key components of the participatory aspects of the program, thus ensuring that participatory processes for health promotion can be sustained over the long term.

Future Directions: The focus of this report is on adapting a participatory ergonomics framework for health promotion in the workplace as part of a larger effort by the CPH-NEW research team to develop a comprehensive plan for integrating individual-focused health promotion with work environment-focused hazard reduction.

POSTER # 22

Overcoming Barriers to Organizational Change: Making Maintenance and Operations Staff Owners of School-based Environmental Improvement Projects

Matthew Hiester

The Cadmus Group, Incorporated

Background: Indoor air quality (IAQ) is an important workplace safety and health issue for the nearly 20% of people who spend their days inside the nation's 120,000 school facilities. Nearly one-fourth of schools have one or more buildings in need of extensive repair or replacement, placing workers at risk of health effects from poor ventilation, mold, and other asthma triggers. Retention, job satisfaction, and performance and productivity have been shown to decrease in schools with poor IAQ, while absenteeism, illness, health insurance, and legal liabilities increase. Operations strategy and financial planning is a major annual consideration for most school systems. Addressing air quality, lighting, temperature, humidity, acoustics, and other environmental factors, therefore, are an essential health and financial priority. Such issues can be successfully addressed through operations and maintenance practices. We examined the role of facility managers and operations and maintenance (O&M) staff in promoting effective environmental strategies within the school organization.

Methods: Case studies were conducted with five schools with established and successful environmental management programs, as measured by the U.S. Environmental Protection Agency's Indoor Air Quality Tools for Schools (IAQ TfS) guidelines. Site visits and in-depth interviews probed the roles and responsibilities of maintenance and operations staff in developing and implementing successful IAQ programs.

Results: Each of the schools studied emphasized that school facility and O&M staff play a critical role in their IAQ programs and that organizational change was a required step in the achievement of environmental results. Effective practices included engaging facilities staff at the beginning of the planning process rather than only at the implementation stage. Successful schools also leveraged the unique expertise of their O&M staff. Staff members served as a liaison between facility management, building occupants, and school decision-makers.

Conclusions: Schools considering implementing an environmental program should include O&M staff in the beginning planning stages and leverage their unique expertise to facilitate communication throughout the organization. Community and school-based health programs that overlook the full participation from facility and O&M staff, especially at the beginning of the planning process, risk missing this vital link between building function and occupant health and performance. We predict these findings will have relevance for other institutional work environments such as offices, hospitals, and prisons.

POSTER # 23

Effects of Externally Rated Demand and Control at Work on Depression Diagnosis in an Industrial Cohort

Joanne Iennaco, MS, Doctoral Candidate

Yale University

Psychosocial factors at work such as high psychological demand and low control have been found to be associated with greater health risk of workers. However, questions remain regarding the subjective vs. objective nature of measurement of these exposures, as well as regarding how specific job characteristics may relate to both exposure and outcomes. This retrospective cohort study evaluates the effect of externally rated demand (working fast, without error, and conflicting demands) and control (over how and when work is done) on incidence of depression diagnosis, based on industrial hygienist ratings of psychosocial factors for individual jobs in a large industrial cohort. The cohort consisted of 7,566 hourly manufacturing workers with a minimum of 2 years employment, and lack of prior depression diagnosis (ICD-9 296, 309, 311). Psychosocial exposure to demand, control and job strain at work were externally measured based on job specific characteristics (based on job title, department and plant location) and health claims with a diagnosis of depression were identified over a six-year period (1998-2003). Data were analyzed using logistic regression, and final models were adjusted for demographic (age, gender, race, education, job grade) and lifestyle risk factors (smoking, BMI, and cholesterol).

Results indicate that high demand jobs significantly increase risk of depression diagnosis in this hourly industrial workforce (OR 1.39, (95% CI 1.04-1.86)). Low control jobs were found to be protective for depression diagnosis (OR 0.69, (95% CI 0.5 - 0.94)), and moderate control jobs heightened risk (OR 1.14, (95% CI 0.86-1.51)), however with adjustment for lifestyle risk factors neither relationship was significant (low control OR 0.78, (95% CI 0.56 - 1.08), moderate control OR 1.07 (95% CI 0.81-1.43)). Interaction terms for demand and control were not significant in models. Conclusions: High demand jobs confer greater risk for incidence of depression diagnosis in this population of hourly manufacturing workers, while control did not have significant effects. These results are important given that ratings were independent of the individual worker's perception of their job, that the external ratings of exposure were specific to the individual's job, department and location, as well as that the focus is on hourly industrial workers who have been less commonly studied. Results suggest that efforts to intervene to reduce incidence of depression diagnosis should focus on change related to psychological demands of jobs.

POSTER # 24

Thirty Minutes During the Workday to Exercise: What do Supervisors Think?

Julie Gazmararian, PhD, MPH

Emory University, Rollins School of Public Health

Background: Other government and university settings including the state of Arkansas and Cornell University have applied the policy of giving employees 30 minutes of paid time during the workday for exercise, but this policy has never been rigorously evaluated. In early 2006, we performed a needs assessment of Emory employees; the majority of Emory employees indicated that "time" was their biggest barrier to exercising. With these two factors in mind, the Physical Activity and Life Style (PALS) study implemented the policy of providing employees 30 minutes of paid "time during the workday to exercise" in randomly selected Emory University departments and is currently following participants for a nine month study period.

Focus of Research: Many high level Emory administrators have expressed strong support for the PALS Project and interest in applying the policy university wide. The PALS study understands that even with positive study results and high level administrative support, the policy could not be widely implemented unless employee supervisors perceive this policy to "work" on a practical level in their departments. PALS also had a keen interest in supervisors' opinions of what additional parameters and rules they would add to the study rules we established. We understand that this kind of grass roots support is important if PALS will become a sustainable program.

Approach: PALS invited all supervisors of "time during the workday" employees to one of three focus groups which were separated by area of university organization (Facilities Management, Emory College, and Emory Research). A trained focus group leader posed questions in each group. Objectives for focus groups included determining: 1) if "time during the workday" is logistically possible for supervisors and employees to implement; 2) the effect of the "time during the workday" policy on employee productivity and overall health; and 3) the general overall perception of supervisors towards the "time during the workday" policy in their workplace. Focus group discussions were transcribed and analyzed.

Subsequent to focus group discussions, we conducted a web-based survey with all supervisors. The survey included questions about the impact the PALS program on different aspect of employee performance, efficiency, health and work attitudes. Supervisors were also asked directly to give feedback on any problems that occurred with implementing the "Time during the workday" policy.

Summary of Findings There are 201 participants in the time groups from 30 different Emory departments with 97 supervisors. "Time during the workday" departments include such diverse departments as: Chemistry, Facilities Management, Emory Police Department and Health Library. The three focus group discussions included 19 supervisors from 12 different departments. We are currently analyzing the transcripts. In general, the feedback was overwhelming positive. One supervisor reported a positive impact saying: "To sum it all up, if excellence is Emory's destination, then they need to offer it to everyone. It will make a better work environment, everybody would be happier with more productivity and morale." The web-based survey of the supervisors will be completed by May and the results will be finalized by July 2007.

POSTER # 25

National Survey of Medical Practitioners Who Certify Medical Fitness for Duty in Commercial Motor Vehicle Drivers: From Research to Practice

Brenda Kirby

U.S. Department of Transportation, Federal Motor Carrier Safety Administration

Context, background, importance: The United States Congress mandates that DOT certify medical fitness for duty of commercial motor vehicle (CMV) drivers who operate in interstate commerce. DOT has a rulemaking in progress to develop a national testing and training program for health care providers who perform these examinations,including implementation of national data system or roster of qualified practitioners.

This population survey is the first study of its kind to examine the practices of the estimated 50,000 doctors of medicine and osteopathy, advanced practice nurses, physician assistants and chiropractors who perform these examinations.

The public health impact of regulatory and programmatic changes in the practices of this provider population are significant as an estimated 3 million examinations are performed annually on these drivers. Large truck and bus drivers comprise the largest regulated population of American transportation safety workers, and must receive a medical examination every two years, at a minimum. These efforts are critical to the control and prevention of large truck and bus crashes, injuries and deaths.

Specific purpose and objectives: The purpose of this study is to improve the driver medical examination process, including linking the fitness for duty examination directly to testing and training as well as the determination of the prevalence of specific tasks performed by practitioners. Objectives include: 1) to understand who performs these examinations and explore the differences between practitioners, 2) to estimate the frequency of examination tasks (which components are most critical in determining fitness for duty, and 3) to identify non-essential tasks currently performed during the medical examination process. Once improvements in the medical examination process occur, similar studies would be required periodically to maintain the integrity of the new testing and training program.

Approach: The survey population is defined by two methods - snowball and random sampling of individuals from organizations expected to have these practitioners in their membership (e.g., national medical associations). The subgroups are: doctors of medicine, doctors of osteopathy, physician assistants, advanced practice nurses and chiropractors, who are licensed to perform physical examinations in their states. General categories of variables are: demographic, medical history, specific elements of the physical examination (including diagnostic tests), health education counseling, risk assessment, and outcomes and length of certification (e.g., 3 to 24 months). Likert scale responses predominate the survey. Descriptive and regression analyses will be performed.

Summary of findings: The study data collection period ended in February 2007. Analysis is in progress. The preliminary assessment of the response rate > 50% (N = 4,000). This is the first study ever attempted in this practitioner population, and the results will be used to inform education activities, programs and regulations governing the medical fitness for duty of America's large truck and bus drivers. This is the first public presentation of these data. Refer to the following web site for more information about FMCSA's medical program: http://www.fmcsa.dot.gov/rules-regulations/topics/medical/

POSTER # 26

Economic Evaluation of Occupational Health Interventions: Results from Macro and Micro Level Studies

Supriya Lahiri, PhD

University of Massachusetts, Lowell

We have developed two types of economic models to evaluate the cost-effectiveness of occupational safety and health interventions. The macro level (economy-wide) model estimates the cost effectiveness ratios (CER's) of the different kinds of interventions (e.g. training, engineering controls). The micro level model can determine the economic efficiency of implemented or proposed occupational interventions at the facility level.

In the macro approach, a simulation model for a 100-year time horizon, developed by the WHO-CHOICE initiative project, is used to estimate the effectiveness of occupational health interventions in healthy year equivalents. In one study, four back-pain interventions were evaluated: training, engineering controls, engineering controls and training, and a comprehensive ergonomics program. The model CER (cost per additional healthy year) results for the 14 WHO defined subregions of the world showed that worker training is the most cost-effective intervention for reducing back pain/injury incidence. According to the WHO Commission on Macroeconomics and Health, any intervention that costs less than three times GDP per capita for saving a healthy year should be considered good value for money. We found that all of the CERs for the different interventions, for each of the regions, fall well within their GDP per capita estimates. Given this criterion, the engineering controls interventions as well as the comprehensive ergonomics program look very cost effective for all of the WHO subregions. In a second study, CER's were estimated for speciﬁc interventions to prevent occupationally-induced silicosis in two subregions: AMROA (Canada, USA), and WPROB1 (China, Korea, Mongolia). In both subregions, the CER's of engineering controls were most attractive. Although dust masks are cost-effective, the total efficacy is extremely limited. To the extent that this analysis can be generalized across other subregions, it suggests that engineering control programs would be cost-effective in both developed and developing countries for reducing silica exposure.

The micro approach provides a transparent framework that incorporates not only the costs of investment in equipment and labor but also the avoided costs of lost work time, productivity losses, and medical care. Three case studies were available of interventions to reduce musculoskeletal disorders in manufacturing companies in the United States. The net-cost estimates consistently showed that ergonomic interventions (a combination of training and engineering controls) applied appropriately can result in substantial cost savings for the companies. Annualized cost savings ranged from $111 to $1,556 per employee, with benefit cost ratios ranging from 5 to 84 and pay-back periods all less than one year. Results of our analyses also reveal that the greatest economic savings to manufacturing employers came from improved productivity resulting from advanced technological design of the ergonomic interventions. Our analyses suggest that it is in the economic interest of management to prevent occupational morbidity and mortality. We recommend incorporating a protocol for collecting cost and effectiveness data for occupational health interventions. Efforts to validate the net-cost model for ergonomic interventions and health promotion are currently underway through prospective studies for nursing homes in the health care industry and at selected manufacturing sites.

POSTER # 27

The Haddon Matrix Applied to Workplace Violence Prevention

Johnny Lee

Peace at Work

Violence prevention has received increasing attention as the CDC and NIOSH have taken strides to address violence using public health models and concepts. Two central elements of the public health approach are preventing injury or illness before it becomes a threat and second, to go "up the stream" to implement an intervention on the broader society level as opposed to the individual impact. A common model that develops a framework for thinking about these levels of intervention is the Haddon Matrix which was developed to address traffic safety issues but its template can be used for any health and safety planning purpose. The matrix is a table with four columns (indicating where/how the intervention is conducted) and three rows (indicating when the intervention is implemented); it is the intersection of these factors that determine where the intervention or prevention measure is put into place. The columns of the Matrix stand for Person, Agent, Environmental and Societal factors. The rows indicate Pre-Event, Event and Post-Event. For purposes of violence, Event is when the threat has been identified while Post Event covers the actual assault incident.

This abstract will apply the Haddon Matrix to the subject of workplace violence. This occupational threat has been categorized in 4 general areas, depending on the source of the threat: Type 1-Strangers or Crime; Type 2 -Clients; Type 3- Co-Workers or Former Employees and Type 4-Domestic Violence. The benefit of the using the Haddon Matrix is that it identifies the key prevention and intervention strategies that are unique to each type of workplace violence.

The poster presentation at the WorkLife 2007 Symposium will graphically illustrate the Matrix for all four types but for purposes of this abstract, only some of the table fields will be described pertaining to domestic violence. Much has been written and developed to help victims of abuse when the threat has been identified (Event stage). An intervention for at the Individual level may be moving their working space or changing their responsibilities. Agent changes can be blocking the offender from sending threatening emails.

However, as the public health approach emphasizes preventing the violence before it occurs, there are several interventions at each level that can be effective. At the Individual level, training can be provided through healthy relationships skills development, helping potential victims to recognize signs of abuse and how to confront the controlling behavior. At the Agent level, gun control is the most logical step but has significant political obstacles. Finally, the Societal intervention has the chance for the broadest impact. As companies take a stand on condemning domestic violence and provide support to the movement to increase awareness on the subject, the risk factors that lead to domestic violence will diminish. These interventions not only make the workplace safer but help the broader community where the workforce originates.

By using the Haddon Matrix, interventions can be developed to help prevent violence from impacting the workplace and our communities.

POSTER # 28

Domestic Violence Assaults in the Workplace

Johnny Lee

Peace at Work

Domestic Violence is a serious threat to workplace safety and health. In North Carolina from 1996 to 1998, 75% of the women killed at work from "dispute-related" incidents (non-robbery) were murdered by ex-partners (Killed on the Clock, American Journal of Industrial Medicine 37:629-636 2000). Nationally, there are an estimated 13,000 acts of violence against women at work each year by their partners (Violence and Theft in the Workplace, U.S. DOJ, July, 1994).

This abstract will describe the findings of a study analyzing 155 cases of domestic violence assaults in the workplace to determine the trends, risk factors and vulnerabilities to help inform security planning measures should a threat be identified. However for the WorkLife 2007 Sympsium, the study is being updated to include an additional 200 cases. The cases for this study were all based on assaults that occurred in the workplace as a result of a domestic violence situation. The majority of these cases were obtained through media reports with some further investigation through contacting local law enforcement, domestic violence shelters, and the news reporter. Other cases were gleaned from court cases and law enforcement reports. The earliest case occurred in February of 1986 with the last incident in November 2004. 79% of the cases occurred since 2000. The majority of the cases were in the United States of America with 12% occurring in other countries, most of those in the United Kingdom and Canada.

Key findings:
Less than half of the perpetrators tried to escape capture after the assault. 42% attempted or committed suicide and 11% either turned themselves over to the authorities or waited for arriving officers without resisting arrest. When the time and place of the assault was known, 31% occurred in the parking lot as the abuse victim was arriving for work. Over half occurred at the beginning of the shift. The vast majority of the perpetrators were male (94%). However, 75% of the female perpetrators either hired a hit-man or conspired with their boyfriends who committed the actual act.

In 77% of the cases where the abuse victim had obtained a TRO (Trespass Restriction Order) against the perpetrator, a firearm was used to commit the assault, despite a federal regulation banning gun ownership by the assailant. When it was know if the perpetrator had criminal record or not, almost half had prior domestic violence convictions.

In 23% of the cases, there was either a recent, previous incident at the workplace or a direct warning from the abuse victim about the potential threat.

In only 8% of the cases was it identified that the employer took any precautions prior to the assault.

By identifying the key risk factors for these assaults, security and safety personnel can better develop security measures to prevent assault in the workplace.

POSTER # 29

Stakeholder Input and Worker Health Protection in Commercial Shrimp Fishermen of the Gulf Coast

Jeffrey Levin, MD, MSPH

The University of Texas Health Science Center

Background: The commercial fishing trades are among the most dangerous jobs in the world. Casualties that occur in these jobs are the result of human factors, machinery and equipment, and the environmental elements at sea. Important behavioral issues such as non-use of safety practices/equipment may be strongly influenced by cultural factors.

Contributors to mortality and morbidity have been studied in recent years among commercial fishermen in Alaska (United States Coast Guard District 17). Less is known about the population of commercial fishermen along the Gulf Coast, recognized to have the second highest rate of fatalities in the United States (District 8). Furthermore, lifestyle and other behaviors which may influence illness and injury in this workgroup have undergone little exploration.

Objectives: The long-term goals of this research effort are - 1) to characterize selective workplace factors and lifestyle behaviors which may contribute to morbidity and mortality among Gulf Coast shrimp fishermen and 2) to utilize a community-based approach to planning, implementing, and evaluating prevention and education measures directed at priority workplace factors and lifestyle behaviors as identified by stakeholders. This special population is made up largely of Vietnamese immigrants.

Approach: The initial phase of this project has focused on the fleet of shrimp fisherman in the port region of Galveston, Texas. Working closely with representatives of the U.S. Coast Guard, a convenience survey of commercial fishermen in this region (n=132) was undertaken to characterize the population, followed by a series of focus groups to address potential approaches for training interventions which might influence safety behaviors. The findings have been utilized to design hands-on safety training on "squared away" vessels and to conduct this pilot training in Vietnamese with experienced marine instructors and with a focus on vessel captains as workgroup leaders (59 captains trained). The theoretical framework for this study relies upon models for behavior change and intervention.

Findings/Future Directions: 93% of those surveyed were over the age of 30 with only 15% born in the United States or to a U.S. citizen. In excess of 50% of those surveyed spoke little/no English, over half the group considered the job to be very safe to neutral, nearly 90% identified the physical demands of the job to be medium or heavy, and 85% identified personal behaviors as potential contributors to accidents. The majority fish throughout the year (except January and February) with nearly 75% averaging >200 days and >8 hours per day. After action review of the pilot training has yielded important findings.

Designing interventions to enhance the implementation of prevention practices requires an approach which relies heavily on the development of community trust and stakeholder input, while considering the cultural influences which may significantly impact success. Future efforts will be directed at priority workplace factors and lifestyle behaviors as identified by stakeholders at multiple port locations.

POSTER # 30

Six Promising Practices in Worksite Settings for Heart Disease and Stroke Prevention

Dyann Matson-Koffman, DrPH, MPH, CHES

Centers for Disease Control and Prevention

Background: Heart disease and stroke, the principal components of cardiovascular disease, are among the nation's leading causes of death and disability and are projected to cost $438 billion in 2007, including health care expenditures and lost productivity. Because these health care costs continue to rise, employers want to know about successful health promotion programs at the work site that improve cardiovascular health (CVH) outcomes, and reduce related risk factors and costs.

Purpose: The goal of this project was to identify promising practices in work sites that showed the positive outcomes of reducing high blood pressure levels and high blood cholesterol, improving cardiovascular health, and containing health care costs.

Approach: A review of published literature and web sites was conducted to identify work site health programs and key practices that are effective. Results of the literature review and recommendations from a panel of experts were used to identify companies with promising practices for heart disease and stroke prevention. Six worksite health programs, ranging in size from 225 to 165,000 participating employees, were selected for case study interviews, which were conducted with directors or managers of wellness programs. The six companies with promising practices are Highsmith Company, Fieldale Farms, LL Bean, Duke University, Johnson & Johnson, and General Motors.

Findings: The literature suggests that a comprehensive health promotion program that includes sustained individual risk reduction counseling is highly effective for helping to control blood pressure and cholesterol. Comprehensive worksite health programs focused on lifestyle behavior change have been shown to yield an estimated a $1-$6 return on investment for each dollar spent; employers saw payoffs in 2-5 years. The case studies with six different employers showed that they offered various interventions to improve cardiovascular health, including 1) health risk assessments with feedback, 2) follow-up for persons at high risk for heart disease and stroke, 3) plant-wide environmental and policy interventions, and 4) incentives. Results for each case study will be summarized, with an in-depth review of the Fieldale Farms Wellness Program. In 2004, health care costs per participating employee per year at Fieldale were $3,052 compared to $6,900, the national average for manufacturing employees. Based on this literature review and case studies, work site health promotion programs were associated with positive health outcomes and lower employer costs, and they can be an important strategy for reducing cardiovascular disease risk factors.

Future Directions: This information was published in CDC's Successful Business Strategies to Prevent Heart Disease and Stroke Toolkit, and disseminated to state health departments and other key employer groups. Plans are to continue to update and disseminate these practices to other business coalition and employer groups.

POSTER # 31

The Successful Business Strategies to Prevent Heart Disease and Stroke Toolkit: Results of Training and Consultations with State Health Departments and Employer Groups

Dyann Matson Koffman

Centers for Disease Control and Prevention

Background: Research has shown that four of the top ten most costly physical health conditions affecting U.S. employers are related to heart disease and stroke, the first and third leading causes of death in the U.S. Much of this burden could be reduced by individuals adopting healthful lifestyles, and employers could play a key role in supporting healthy lifestyles in the workplace.

Purpose and Objective: CDC's Successful Business Strategies to Prevent Heart Disease and Stroke Toolkit was developed to promote the importance of preventive services and comprehensive policy and system changes in worksites to encourage individuals to adopt healthy lifestyles and control risk factors for heart disease and stroke prevention. The objective is for state health departments and others to use the toolkit to educate and influence employers to provide preventive health benefits and establish comprehensive worksite interventions to prevent heart disease and stroke among employees.

Approach: Methods used to develop, refine and encourage use of the Toolkit include: (1) establishing a national advisory panel and a state ad hoc group, (2) conducting a literature review, (3) identifying promising practices and key business/cost messages to prevent heart disease and stroke, (4) pilot-testing, (5) training states on how to use the toolkit, (6) and getting feedback from states and employers on specific toolkit components.

Findings: The Toolkit includes: (1) Toolkit Guide with methods to reach and engage business leaders, (2) Six-Step Guide for Employers, which includes a business case for investing in comprehensive programs and services to prevent heart disease and stroke, (3) Evaluating Health Plan Benefits and Services Checklist, which allows employers to negotiate a health benefits package/program that fits their workforce, (4) promising practices, which summarizes selected programs in worksite and health care settings showing positive outcomes for heart disease and stroke prevention, (5) presentation that can be used with business groups, (6) glossary, which provides definitions and business terms, and (7) additional resources and articles that support the business case for heart disease and stroke prevention. Six training and six consultations with states on how to use the Toolkit were conducted in 2006 and 2007. Several states have established partnerships with business coalitions or employer groups and have used the Toolkit to reach and engage business leaders to plan, implement and measure progress on worksite wellness programs. During this session, we will present a description of the Toolkit and highlight several promising practices.

Future Directions: A final survey of states will be conducted in late 2007 to examine use of the toolkit and effectiveness of trainings and consultations. State and employer evaluations are being used to revise and update the Toolkit.

POSTER # 32

Occupational Injury Tracking with OSHA Logs: Ruler or Rubbish?

Eileen McNeely, PhD

Harvard School of Public Health

OSHA logs, logs that collect data about employee injury and illness, are a window into how the many aspects of an organization are interconnected and can have unexpected effects on one another. OSHA logs are often a neglected piece of documentation in the morass of required organizational paperwork. The beauty of having data from several incidents collected in OSHA logs is that one can begin to observe common threads among incidents.

Yet the OSHA data may not be the most accurate reflection of the organization, employee injury and illness, and its causes. As part of a study about the relationship between staffing, patient care delivery models, overtime use and patient outcomes, OSHA logs were collected from nurse unions, hospital administrators and staff nurses. Logs were collected for the years 1995-2004. Less than one-third of the approximately 500 hospitals targeted supplied their logs. Researchers were informed of logs being kept on old computers that no staff knew how to access, of lost logs, of frequent staff turnover and of little staff training for those whose task it was to keep the logs. Union attempts to acquire the logs encountered similar problems, as union officials reported back to the researchers. In the end, researchers obtained over 600 “years” of OSHA data from 130 hospitals.

The logs that were received revealed a data collection system that appears greatly flawed and calls for a re-examination of the effectiveness of this system as the basis of occupational health injury and illness rates. A lack of institutional commitment to proper data-keeping, and a consequent lack of training in the purpose and procedures of keeping OSHA logs both play a role in this problematic system. Yet at an even deeper root, researchers have come to examine the effectiveness of the actual data that are collected and how those data are then analyzed. Do the OSHA logs ask the “right” questions to understand the occupational health picture? Are these answers examined in the proper context, grounded in the reality of a particular occupation's culture, to illuminate workplace health issues? The analysis of the logs collected from hospitals would answer both of these questions in the negative. Researchers would encourage others to re-examine the injury and illness rates for other industries in light of the lessons learned here.

POSTER # 33

The Mobile Team Approach to Workplace Health Promotion for Small Business: The Experience of the Harlem Business Wellness Initiative

Peter Messeri, PhD

Mailman School of Public Health

The Harlem Business Wellness Initiative (HBWI) is a collaboration between the Mailman School of Public Health, Harlem Hospital Center, and the Harlem (New York City) business community. The overarching goal of the project is to translate principles for health promotion programs that work in large business to the small business environment found in inner city settings. HBWI has developed a mobile team approach in which the services of a team of health educators are offered free of charge to small businesses. Each employee is invited to complete a computerized health appraisal interview conducted by a trained health educator. The results of the health appraisal serve as the basis for a personalized counseling session in which the employee and health educator develop a health action plan that may include either or both lifestyle changes or referrals to preventive services offered by a "preferred provider network" assembled expressly for HBWI program.

Currently the HBWI mobile team is undergoing a field experiment to evaluate its feasibility and effectiveness. The field experiment is planned to enroll up to 50 Harlem businesses that employ between 5 and 50 employees. Participating businesses are randomly assigned to the mobile team condition and a control condition involving the distribution of printed health education material. Outcomes are 1) visits to a primary medical care provider, 2) insurance coverage, 3) use of preventive services, and 4) health risk factors. Outcomes are measured at baseline and at three-month follow-up. Thus far health profile of the employees participating in the mobile are consistent with expectation that when compared with similar New York City population they will be less likely to have insurance, a regular source of medical care, elevated numbers of health risk factors, and above average need for age and gender appropriate preventive services.

The presentation will also review the real difficulties in reaching small businesses. We review the results of our current recruitment strategy and discuss plans for a more intensive marketing strategy. Results to date indicate that it is feasible to conduct a mobile team approach to health promotion in small businesses. Participating employer and employees are enthusiastic about their experiences with the mobile team, but the difficulty in reaching and gaining the attention of small business owners should not be underestimated.

POSTER # 34

Surveillance of Fatalities in New York City Construction 1996-2006

Pradeep Rajan

New York City Department of Health and Mental Hygiene

Background: In New York City (NYC), risk factors contributing to fatalities among construction workers are not well understood. We examined construction fatality data to identify factors potentially related to construction work-fatalities occurring between 1996 and 2006.

Methods: Data were obtained from Occupational Safety and Health Administration fatality inspection reports, the Bureau of Labor Statistics Census for Fatal Occupational Injuries data, and summaries of Vital Statistics from the NYC Department of Health and Mental Hygiene's Office of Vital Statistics.

Results: Between 1996 and 2005, there were 265 fatalities in the NYC construction industry. From 1996 to 2000, the number of fatalities due to construction related work in NYC increased by approximately 30%. However, over the next five years the number of fatalities dropped by approximately 23%. White, black, and Hispanic workers accounted for 54%, 20% and 11% of fatalities, respectively, in 2002, and 30%, 43%, and 20% of fatalities, respectively, in 2005. Between 2001 and 2006 the three major causes of construction related fatalities were falls (54%), being struck by an object (13%), and crushed (12.9%). Between 2001 and 2004, the percentage of workers killed on the job that were members of a union increased from 17% to 33%, whereas the percentage speaking a non-English language decreased from 100% to 38%.

Discussion: These results indicate that fatalities in NYC due to construction related-work decreased over a ten year period. Further examination of detailed case reports is needed to identify risk factors contributing to fatalities, and explain the predominance of fatalities due to falls.

POSTER # 35

The "Worksites Overweight/Obesity Control/Prevention Trial": Background, Purpose, Approaches, and Findings

Robert Ross

University of Vermont

Background: Two-thirds of U.S. adults, including working adults, are overweight or obese, thus at elevated risk for diseases/conditions (e.g. hypertension, dyslipidemia, type 2 diabetes, coronary heart disease, osteoarthritis) known in the workplace to increase absenteeism, decrease productivity, increase premiums. Small firms (<500 employees) employ half of all U.S. private sector employees, pay > 45% of total payroll, generate 60-80% of net new jobs, create > 50% of non-farm private GDP. Purpose. The "Worksites overweight/obesity prevention/control trial" (04/01/05 - 09/29/07) is a CDC-sponsored 30-month, 4-arm (3 Test/1 Control), small employer (51-249 regular employee) cluster-randomized control trial conducted at the University of Vermont in partnership with Blue Cross Blue Shield of Vermont. At study start 28 employers (7 per arm) and >1000 employee participants were enrolled. The purpose is to contribute to the identification of cost effective interventions that improve the health of employees measured on clinical (e.g. lipids, glucose, weight), functional (health status), productivity (work role performance), and cost (employer/employee, health-related) outcomes. The objective is to gauge the relative effectiveness-compared to no program at all-of 3 distinct program approaches ("Individual," "Environmental," "Combined"") to reducing employee behavioral health risk factors (unhealthy diet, physical inactivity, unmitigated stress, tobacco addiction). Approaches. The "Individual" approach links an individual HRA to individual-level health risk-reduction programming, thus employs web-based stage-readiness-to-change health risk screening and risk-reduction coaching as the platform for delivering tailored health services (targeting healthy diet, physical activity, stress reduction, smoking cessation) to sub-sets of employees identified according to risk. The "Environmental" approach links an environmental HRA to environment-level health risk-reduction programming, thus employs building/worksite asset screening and asset-improvement coaching as the platform for delivering altered worksite settings (targeting physical, informational, nutritional, grounds, neighboring, policy, educational environments) to all employees alike independent of risk. The "Combined"" approach integrates the two. The Project team works closely with 3-4 member Program delivery (PD) teams across Test arm sites to deliver interventions. Findings. Baseline to 1st Follow-up (6-8 mo) readings on clinical outcomes (run December 2006 on 647 participants for whom these data were then available) show across-the-board declines. Across the "Combined" (158 participants), "Individual" (165), "Environmental" (179), and Control (145) arms, respectively, unit declines were (BMI) -0.3, -0.22, -0.05, -0.21; (Waist circumference) -1.83, -1.75, -2.28, -0.65; (Weight) -1.56, -1.01, -1.68, -0.52; (LDL) -15.09, -7.34, -9.56, -9.32; (Cholesterol) -28.04, -17.76, -22.77, -21.32; (Glucose) -4.24, -1.78, -0.31, -3.76; (Blood pressure) -8.41, -6.93, -10.49, -5.27. Discussion. Between Test and Control arm participants, the latter declined (always at a < rate) right along with the former: though they received no wellness programming they did receive the same baseline and follow-up clinical readings as the former. Among Test arm participants, those in the "Combined" dropped the most on 5 of 7 outcomes. Between "Individual" and "Environmental" arm participants, the latter dropped more on 5 of 7 outcomes. The strongest Test arm intervention was the "Combined," followed by the "Environmental." Conclusion. Small firms might well pursue the "Environmental" approach, alone and in combination with the "Individual," to reducing employee health risk factors.

POSTER # 36

Applying Epidemiologic Surveillance to Worker Health Protection and Promotion

Clifton Strader, PhD

U.S. Department of Energy

Background and Context: The Department of Energy (DOE) oversees a unique industrial complex whose diverse activities in research, production, dismantlement, and environmental restoration have the potential for workplace exposures including both radiation and chemical hazards. As it addresses these tasks, DOE is faced with maintaining the health of a specialized and skilled but aging work force. This task is made more difficult without the ability to characterize workforce health, e.g., to determine the distribution, rates, and trends in morbidity and injuries that affect productivity.

Purpose of Program: The Department's Illness and Injury Surveillance Program (IISP) responds to these needs through the routine collection and analysis of selected morbidity and demographic data using existing data sources from site occupational medicine departments, human resources offices, and safety sources. Implemented at DOE Headquarters in 1990, the IISP currently has 13 participating sites and conducts epidemiologic monitoring on approximately 80,000 active contractor workers. The program focuses broadly on both occupational and non-occupational morbidity, with the recognition that whether morbidity is occupational cannot always be recognized, and because even non-occupational morbidity can profoundly affect the health and productivity of the workforce.

Approach: This presentation discusses ways in which the IISP generates information useful for protecting and promoting the health of the workforce. Selected example analyses are used to discuss the identification of emerging workforce health issues, how the program can monitor health trends over time, and how it can facilitate the evaluation of morbidity from a variety of perspectives including comparisons by job category, facility type, and diagnosis. The impact of illness and injury can be monitored using both diagnosis rates and workdays or calendar days absent from work. Comparisons of illness and injury rates with those of appropriate private sector populations further assess the health of DOE workers.

A better understanding of the relative impact of various health and safety issues in the workforce contributes to the more effective distribution of limited occupational health and safety program dollars. Once those health and safety interventions are in place, the IISP also provides a mechanism by which their effectiveness of can be monitored, examining illness and injury rates before and after interventions.

Identifying trends in worker illness and injury rates and patterns is increasingly important as the workforce ages, the character of morbidity changes, and the need to develop and implement prevention strategies and monitor their effectiveness grows. The IISP offers one mode for how essential data can be gathered, managed, and analyzed to produce relevant information on which to base these decisions.

POSTER # 37

Enhancing Coordinated Health Protection and Promotion: What Changes Must Educators Make?

Donna Summers, PhD

University of Dayton

Effective worksite programs, practices, and policies are critical to enhancing a coordinated health protection and promotion program. When taking steps to improve worker health, employers need to understand the ins-and-outs of providing an integrated health protection program. In many organizations, the individuals in the position of establishing their organization's policies and practices gained a majority of their education and training at a time when education focused on understanding and meeting standards, and safety hazard recognition and elimination. In the past, educational opportunities provided limited exposure to industrial hygiene and worker health issues. To best support efforts to promote and improve overall worker health, education at the university level must change. This is of particular importance as we develop, educate, and train the next generation of decision makers and policy setters. These curriculum changes will also benefit those who choose to return to class to update their knowledge in this area. Better education will enable them to make worker health an organizational priority.

This paper addresses what curriculum changes are necessary and what needs be done on the university level to focus education and training on vital issues related to creating effective coordinated health protection and promotion programs. Discussion will focus on a comparison between existing courses in industrial safety and hygiene versus newly designed courses which focus on improving worker health and well being while enhancing their ability to work.

POSTER #38

Worksite Public-Private Partnership: Supporting New York City Employers in Health Promotion and Disease Prevention Efforts

Ron Goetzel, PhD

Cornell University for Policy Research, Institute for Health and Productivity Studies

Relatively little collaboration exists between public and private efforts to improve the health and well-being of workers. Employers are often not aware that public entities can provide critical technical support to guide their design, implementation and evaluation of health initiatives. The Wellness at Work (WAW) Program, through the New York City Department of Health and Mental Hygiene (NYC DOHMH), has developed tools, processes, and techniques to support employer efforts. In an innovative 3 year project funded by the Centers for Disease Control and Prevention, the Cornell University Institute for Health and Productivity Studies, the NYC DOHMH, Thomson Medstat, and the Wellness Councils of America (WELCOA) formed a private-public partnership with NYC employers to investigate and document how a health department can effectively support employers in their work-life efforts.

The overall study objectives include: 1) determine the most effective methods that the WAW program can apply to engage local employers in health promotion initiatives; and 2) test the incremental benefits of offering "high-intensity" interventions against "moderate" and lower cost programs on critical success factors including: behavioral risk factors, self-reported biometrics, presenteeism/absenteeism, health care utilization and expenditures and return on investment (ROI).

Overall study hypotheses include: 1) employees participating in high-intensity intervention worksites will show greater reductions in prevalence of behavioral risk factors, self-reported biometrics, presenteeism/absenteeism, and health care utilization and expenditures than employees participating in moderate-intensity intervention worksites; and 2) at a population level, all intervention sites will achieve greater reductions in prevalence in these aforementioned categories than all employed individuals in NYC.

Ten NYC employers agreed to participate in the study. Worksites were matched and randomly assigned to moderate or intense treatment conditions. The study employed a quasi-experimental pre-post design, where participating individuals in the high intensity treatment sites were compared to the participating individuals in the moderate intensity sites. Data collection was conducted at baseline, one year following program implementation (Time 1), and two years following program implementation (Time 2).

Moderate interventions included administration of a heath risk appraisal with mailed information for identified health risks, awareness building for health improvement through channels such as e-mail broadcasts and newsletters, inexpensive environmental changes such as signs encouraging the use of stairs, and access to an internet portal for employee health "challenge" programs. High intensity interventions supplemented the moderate interventions and involved engagement of senior managers in developing a worksite culture supportive of improved health, and a self-management curriculum.

Session leaders will present study results, including outcomes on critical success factors mentioned above for moderate and high intensity intervention sites. Initial results from the EAT (Environmental Assessment Tool) used to assess support for physical activity, nutrition and weight management opportunities,

demonstrated increases in environmental support for both moderate and high intensity sites. Health and financial results using descriptive and multivariate analyses will be presented. Lessons learned will be addressed, such as considerations for enhancing employee participation in interventions, soliciting and maintaining organizational leadership engagement, building organizational ownership and program sustainability after study completion and disseminating findings to the business community.

POSTER # 39

Promoting Effective Worksite Wellness and Occupational Safety and Health

Susan Tan-Torres, MD, MPH

Independence Blue Cross

Independence Blue Cross (IBC) is committed to promoting a healthier workforce and consequently addressing the occupational safety and health objectives of Healthy People 2010. Recognizing that it is important to coordinate and integrate worksite health promotion and occupational safety and health, IBC has collaborated with the National Institute for Occupational Safety and Health through a project funded by the Centers for Disease Control and Prevention. The project aims to calculate the prevalence of selected occupational diseases and conditions by industry type and use the information to work with employer groups in promoting and improving the health and well-being of employees.

IBC has implemented several worksite wellness programs designed to encourage healthy behaviors in individuals, and influence employers to initiate workplace policies that support healthy lifestyles. The ability to provide employers with disease prevalence information is expected to support these efforts in several ways. Currently, IBC provides reports to some employers on employee participation in wellness programs. This information would complement information on the health conditions that these programs are addressing, resulting in increased awareness of the need for these programs and helping to measure their impact. Industry prevalence rates also offer employers a way of comparing their employees' health to their peers and increase awareness that workplace initiatives are very important.

The prevalence data is also useful in improving ongoing relationships with employer groups through collaborations in innovative prevention initiatives designed to engage more employees in worksite wellness programs. This project's detailed disease rate information could support the implementation of tiered incentives that reward increased employer commitment to support worksite wellness initiatives with increased support from IBC. There may also be wellness incentives for employees that are integrated with the worksite wellness initiatives of employer groups.

Industry-specific prevalence reports to employers may also be calculated by geographic area to promote employer involvement in community health initiatives. Knowledge that certain diseases have elevated rates in a community can be a focal point for motivating and planning community interventions and collaborating with health care organizations.

Prevalence data is also useful in the implementation of effective workplace policies geared towards promoting both a safe and healthy work environment and improved health behaviors. These workplace policies represent a promise of achieving the desired outcomes: increased quality of life, decreased absenteeism, increased productivity, and reduced health disparities in the American workforce. In the current employment landscape, providing employer-sponsored benefits involves much more than offering health care coverage when employees are ill. More and more employers are recognizing the need for prevention and improved workplace conditions, which could impact the premiums per employee. Transitioning from an employer's focus on health and disease conditions attributed to acute illnesses, to a focus on prevention of chronic diseases requires a coordinated approach with employers and health plans. Sharing the industry data on prevalence of these conditions with employers is an important step towards promoting and improving the health and well-being of employees.

POSTER # 40

Well for Life Saves Budget Dollars and Protects Employee Lives

Kara Weaver

Bon Secours Richmond

Introduction and Background: Saving people's lives, reducing their pain and helping them achieve healthier lifestyles form the nucleus of Bon Secours Richmond Health System's (BSR) mission. The BSR workforce is the vital core for those services provided to patients and families and the most valuable organizational asset of the health system. The multitude of employee development, employee health and work/life services and programs allows employees to reach higher career goals, provide high quality patient care and still maintain a healthy, satisfying and happy family life.

Well For Life
Employee Wellness Services provide BSR's Well for Life Program, the umbrella for health and wellness programs and services, starting with a voluntary annual Personal Health Profile (PHP), which includes employee lifestyle questionnaire results along with Health Risk Assessment (HRA) results. All employees are offered the free PHP and each year more take advantage of it, having standardized blood work completed and other assessments at one of the nine scheduled employee health fairs or during a new employee's initial health screening. Prevention of health problems and stemming current health problems is the focus for Well for Life programming, and the Profile and Health Risk Assessment can be lifesaving as well. For example, Cindy Branch, 47, had an alarming blood pressure reading of 208/110 when checked during a Fall 2006 Employee Health Fair. She was advised to go to the emergency room or to her physician. A follow-up battery of tests found that she had a leaky heart valve. She had a stent put in and credits BSR Employee Wellness with saving her life.

Reported Results: The PHP and Well for Life Program produced data for 924 employees that participated for at least three years during a five-year period (2001-2005) with wellness activities, educational programs and workshops, focusing on four general categories: General Health Practices, Nutrition, Exercise and Wellness Activities.

Below are some highlights of the results:
- Health costs went down by 7 %during a period when the employee age increased by 3 percent
- The total number of health risks employees experienced decreased significantly from the first to third year of participation.
- Benchmarking the results of BSR's experience when comparing the first year employees participated in the PHP to the third year of participation against the results of a national research study by the University of Michigan show that BSR's estimated cost savings from decreased productivity loss were $157,726, a decrease in excess health insurance claims produced a savings of $194,891 and decreased absenteeism saved $8,592. Excess costs per health risk factor showed an estimated $343,211 savings when comparing the positive changes from year one to year three of employee participation.

BSR Employee Wellness Services and specifically, Well for Life, help to control rising health care costs for an aging employee population and keep employees present and working at their highest level of productivity in providing quality patient care. Other healthcare organizations and employers in many industries view this health system as a best practice from which to learn.

POSTER # 41

Visual Ergonomics in the Workplace

Jeffery Anshel

Corporate Vision Consulting

Vision is our most precious sense. Our eyes are in constant use every waking minute of every day. The way we use our eyes can determine how well we learn, work and perform throughout our lifetime. Over 80% of our learning is mediated through our eyes, indicating the important role our vision plays in our daily activities. The way we use our eyes in our daily routine has changed dramatically over the past number of years. More and more tasks are done at a close viewing distance, especially on electronic visual displays, and we are working under a variety of workplace lighting conditions. Our visual system must adapt to these changes in order for us to function to our maximum potential.

The symptoms of physical problems that computer users are experiencing are increasing. The eye care community has also seen a jump in the number of patients who request eye examinations due to symptoms they experience at the computer. This has led to the American Optometric Association (AOA) designation of Computer Vision Syndrome (CVS). According to the AOA definition, CVS is “the complex of eye and vision problems related to near work that are experienced during or related to computer use”. The symptoms that most often accompany this condition are eyestrain, headaches, blurred distance or near vision, dry or red eyes, neck and/or back ache, double vision and light sensitivity. The factors that most often contribute to CVS are a combination of improper workplace conditions, poor work habits and existing refractive errors.

The only way to proactively address this growing concern is to screen the vision of employees in the workplace. Statistics support that vision screenings are a valuable tool in uncovering hidden or potential vision problems. However, standard vision screenings, such as reading an eyechart at twenty feet away, does not represent the normal visual condition in the workplace. The only way to adequately and appropriately screen employees is to do so on their own computer displays.

This presentation is designed to give the participants' an awareness and knowledge of the area of visual function and its role in workplace productivity. A discussion of the role of computer-based vision screenings will offer the attendees a tool to effectively address this area of concern before it affects employee comfort and productivity. Special attention will also be paid to the workstation setup so that attendees will be able to troubleshoot potential visual stressors in the workplace.

The information presented here will lead to increased awareness of the effect of visual stress in the workplace. Recent studies have shown how visual conditions can affect productivity, and future research can be designed to forward our understanding of the effect of computer use on our visual system and how this affects overall worker health.

POSTER # 42

The Polarity Model of Workplaces Democracy: Managing the Dilemmas of Empowerment

William Benet

Greater Rochester Area Community/University Partnership Project

Broad context, background, and importance: Wooding and Levenstein (1999,) report that occupational stress is one of the leading problems facing individuals, organizations, and society today. They state "Perhaps the most significant human health consequence of contemporary technological change is the increase in stress felt by most workers across a wide variety of occupations" (p. 48).

Tillman and Beard (2001) add that "the serious impact of [occupational] stress influences performance and many aspects of health, including physical, psychological, and behavioral health, at an estimated cost of $200-300 billion annually" (p. 7).

The U.S. National Institute for Occupational Safety and Health (NIOSH, 1999) says "the nature of work is changing at whirlwind speed. Perhaps now more than ever before, job stress poses a threat to the health of workers" (p. 3).

Specific purpose and objectives: Research suggests that workplace democracy is essential for addressing the negative impacts of occupational stress. However, the literature shows that most efforts to address occupational stress continue to focus on the individual, not democratic workplaces. The purpose of my research was to develop an integrative model of workplace democracy that can be used to address the negative consequences of occupational stress.

Approach: I used the Polarity Management concepts of Dr. Barry Johnson (1996) as the conceptual framework for constructing a theoretical model that builds on a broad range of empirical, field, participative, experiential, and theoretical research. I draw on the occupational stress and workplace democracy research of Dr. Bertil Gardell and others to construct an integrative theoretical model that incorporates the findings of five exemplary models: The Demand/Control Model (Karasek & Theorell, 1990); The Workplace Democratization Model (Bernstein, 1976); The Managerial Grid Model (Blake & Mouton, 1987); The Democratic Worker Owned Firm Model (Ellerman, 1990); and the Democratic Civic Values Model (Butts, 1980).

Summary of findings: My research, conducted at the University of Toronto, resulted in the development of the Polarity Model of Workplace Democracy. The model consists of ten paired elements (freedom - authority; justice - due process; diversity - equality; human rights - organizational obligations; and participation - regeneration). My research concludes that: a) none of these elements works well without its paired element; b) all ten of these elements are essential for the attainment of workplace democracy; and c) none is sufficient independent of the others.

Dilemmas occur because each of the ten elements has both positive and negative aspects for both the individual worker and the organization. The development of humane, empowering, productive, healthy, and safe workplaces requires effective management of the dilemmas associated with each of these polarities in order to gain the maximum positive aspects of each and eliminate the maximum negative aspects of each.

The Polarity Model of Workplace Democracy emphasizes both workers' rights and responsibilities in order to effectively manage these dilemmas, thus: a) reducing or eliminating the negative consequences of occupational stress; b) contributing to the creation of safe and humane workplaces; and c) maximizing the accomplishments of both the individual worker and the organization.

POSTER # 43

Experience with a Program on Occupatinoal Exposure to Blood Borne Pathogens in Bogota, Columbia

Marta Bernal

Avenir

The Colombian Social Security System demands employers to affiliate their employees to insurance companies. These companies provide assistance and economical benefits when an occupational accident or a professional illness occurs. We want to present a five year experience of a program that takes care of occupational exposures to blood borne pathogens in health care workers and medical students in Colombia. Assistance activities are based on protocols developed by the CDC. The Colombian System on professional risks formulates that preventive activities on occupational risk are developed by employer, insurance companies, and workers. It designates responsibilities to each one. The experience of this program has shown strengths and weaknesses on preventive activities on each one of these actors. Likewise, it has developed strategies through medical appointments. These medical appointments help exposed (workers and students) to enforce their ability to identify those factors that had favored the incidence of these accidents and to strengthen safe and self-care practices. For workers, the majority of accidents are related with the haste to fulfill the standard of performance established by health companies. We also found mishandling of sharp objects which carries the occurrence of accidents for cleaning and maintenance personnel. For medical students, most of accidents are related to the lack of experience on performing common medical activities and also to personal attitudes such as shame to use personal protection elements or fear of asking for explanation or additional training, fear of sanctions and of being labeled as "conflictive students". The majority of users of the program show anxiety when they realize that these accidents carry consequences such potential mortal infections or serious health problems. This program implements psychological consultation for exposed people. This psychological consultation has been well received by users. For them, it is a space to talk and think about themselves and the situation they are under. Over these 5 years we have attended cases, cases had been closed, cases are being attended, and we have no trace. At the end of the following of the cases most of users of the service refer a change in their labor practices aimed to decrease the possibility of another accident. Usually the change is in the way they work: working with no rush and with more conscience on what it is been done.

Programs on Occupational Health in health care settings and health faculties should develop educational programs that help workers and students to keep and take care of their health. They should be the first beneficiaries of the concept that we all, that chose health care fields want to: help people.

POSTER # 44

Who is Healthier: The Ever-Worked, or the Never-Worked Population?

Anasua Bhattacharya, PhD

National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention

Background: It has long been demonstrated that economic status, like, wealth and income has a positive effect on individual health status. There is also a large literature on how health affects labor supply. The question that arises across disciplines and has remained largely unanswered is that whether labor force participation has any effect on health status. The difference in health status among the ever-worked and never-worked population have received limited attention in the field of economics.

Objective: This study focuses on how health status varies across the ever-worked and never-worked population. Whether or not individuals of working age with work experience enjoy better health status in comparison to those belonging to the same age group with no work experience. In other words, is there any relation between individual health status and labor force participation? If there is any, then of what nature? The study also examines if individuals consuming more prevention have the benefit of better health status and how this consumption pattern varies across the ever-worked and never-worked population.

Data: Longitudinal data from Agency for Healthcare Research and Quality's (AHRQ) Medical Expenditure Panel Survey's (MEPS), for the years 2003 and 2004 is used to test if any difference in health status persists between the ever-worked and never-worked population, controlling for other socio-economic and demographic variables like, education, household income, sex, age, education and others. This data will also be utilized to examine if there exists any correlation between health status and preventive care consumption, like, routine check up, blood pressure check, cholesterol check and others.

The dataset consists of 6,351 observations. Sample size for ever-worked is 3,557 and never-worked is 2,794. The average age of the ever-worked group is about 55 years while that for the never-worked population is 33 years. There are 1,861 females and 933 males among the never-worked, whereas the ever-worked class consists of 2,220 females and 1,337 males. The average number of years of education is 11.8 and 9.53 years for the ever-worked and never-worked categories respectively.

Approach: The correlation between health status and ever-worked or never-worked population is tested using multinomial logistic model. Similar logistic models with Heckman corrections to control for selection bias, if any, are applied to investigate the relationship between health status and prevention consumption. Choice variables, like, having health insurance or not and if health insurance is provided at work will be used to test whether there is any selection bias, that is, whether individuals having better health status consume more preventive care.

Conclusion: Preliminary results obtained illustrate that the ever-worked population are at a disadvantage with respect to health status compared to the never-worked population. One hypothesis for this difference in health status is that health hazards experienced at workplaces cause the ever-worked population to experience an inferior health status. Outcomes also highlight the pattern of preventive care consumption among the ever-worked and never-worked classes of the population.

POSTER # 45

Partnering to Reduce Obesity with Environmental Changes

Bonnie Brehm

University of Cincinnati

It is estimated that U.S employers spend more than 75 billion dollars annually on obesity-attributable medical expenditures. Interventions to reduce or prevent obesity aimed at the individual level have been studied extensively; yet data from research using environmental approaches are lacking. Because 15 million people work in manufacturing, wellness projects in these settings can make significant contributions in efforts to impact the obesity epidemic. The purpose of this study was to test the effectiveness of an institutional level (environmental) intervention to prevent or reduce obesity at manufacturing companies in Kentucky. The project brought together academic researchers, local health department planners, and industry to increase the likelihood of the project's success. Eight manufacturing companies participated in the study: four companies received the environmental intervention and four served as controls. Program planning took place for several months. The investigators presented to human resource managers a list of possible intervention components that were aimed at changing the environment and had evidence to suggest effectiveness at increasing physical activity or improving nutrition. The human resource managers at the four intervention companies were asked to identify components that would be feasible and fit the culture of their companies. The five components of the program selected by all four intervention company representatives included the following: advisory groups, establishment of walking paths, food changes in vending and cafeteria offerings, point-of-decision prompts, and educational strategies. Focus groups with managers and workers were conducted to discuss the proposed program components. The Diffusion of Innovations Theory guided the development of focus group questions. The data were used to refine the intervention, identify strategies to reduce barriers, and develop communication channels to enhance employee participation. The second phase of the program included implementation of the five program components at the intervention companies along with measurements of 341 randomly selected employees from all eight companies for blood pressure, plasma lipids and glucose, absenteeism, presenteeism, and lifestyle behaviors. Advisory groups consisting of volunteers met regularly to review the program and to demonstrate support for the program with fellow employees. Indoor and outdoor walking paths were established with signs to mark the paths and distances. After meetings with vending company representatives, the number of healthy snacks in the machines was increased. The Snackwise software program was used to categorize snacks according to their nutrient content; labels were placed on the pricing tags inside vending machines to identify healthier snacks. Signs, which were changed every two weeks, were placed around the companies to serve as prompts to increase physical activity and encourage healthy food choices. Educational strategies consisted of nutrition and physical activity information on table tents placed in break rooms and cafeterias, on the program's website, and on email messages from the companies. Binders were developed to provide information about healthy food choices for company meetings and when dining out. The third phase of the program is the sustainability phase. The Northern Kentucky Health Department is working with interested companies to sustain the program. Data analysis will evaluate the effectiveness of the intervention.

POSTER # 46

A Feedback Enabled Behavioral Change Tool for the PC Workplace

Colleen Broersma, BS

Logisens Corporation

Introduction: This presentation will examine an innovative health promotion delivery system which ensures that training coupled with computer coaching and positive psychology leads to genuine behavioral change. Based on research that traditional training and motivational work has a short lifespan in the consciousness of the listeners and that delivery systems need to be more firmly embedded in day to day work activities, the following case studies will be discussed:

Summary: Chris Stockinger of Logisens Corp., Fort Collins, Colorado, USA, with University of Vienna, Austria, conducted three pilot studies from 2004-2006 to demonstrate that the Optimal Office system increases productivity and wellness in the workplace. The testing took place at Aurora Healthcare in Wisconsin, the offices of the City of Fort Collins and at an aerospace corporation.

The Optimal Office system consists of a bio-sensor implanted in a computer mouse, which measures changes in galvanic skin response (GSR - a clinical measurement of the skin's response to emotional stimuli) and body temperature. The physiological data is registered by the Optimal Office software, which provides ongoing monitoring and reports throughout the work day.

When Optimal Office detects increased stress in the user, the system provides onscreen micro-trainings - stress management techniques that include breathing, stretching and calming exercises. The trainings appear several times each day, vary from 30 seconds to four minutes in length and are designed to avoid interruption of the user's work effort. The total training time in an average day is six to eight minutes.

The goal is that with just a few minutes of training each day, Optimal Office users become aware of stress at the point of occurrence and learn ways to help bring it under control for an increased sense of well being, effectiveness and performance on the job.

After 6 months of participation, all Optimal Office users reported a significant decrease in burnout and work stress, and a sizeable increase in life and job satisfaction, with an adherence rate of >80%.

POSTER # 47

Health Behavior Change - The Key to Wellness Program Success

Larry Catlett

Occupational Medical Consulting

Wellness efforts, even in the context of health and productivity management programs, focus on "event" or risk driven population based interventions. These programs are easily administered and less expensive than individualized behavior change interventions but outcomes are often disappointing when evaluated by the following measures of success: high sustained participation rates; significant sustained long-term behavior change; positive economic impact and ROI. Below is a description of outcomes using these criteria for success at two Maine companies supporting an ongoing, on-site, one-on-one, health behavior change intervention.

Cianbro Corporation, a heavy construction company with 2000 employees in 13 states, headquartered in Pittsfield, Maine, initiated their program in 2001 while Dearborn Precision, Inc., with one Maine location, initiated the same program model in 2004. The model's essential elements include: Company Health Readiness Assessment determines company strengths and weaknesses in regard to supporting and sustaining wellness; annual completion of this tool to assess company progress in this regard; initial and ongoing management training to clarify the connection between safety, productivity, benefit cost management and health and the necessity of management program "sales and modeling" to assure sustainability; participant education regarding program content, intent and the individualized nature of the behavior change intervention; a wellness team supporting intervention delivery; an ongoing, individualized one-on-one, worksite behavior change intervention, using an HRA for a starting point, in which a specifically trained health coach must collaborate with the participant, evoke the "answers" to health behavior change problems from the participants and enhance their intrinsic motivation for change; software that supports, drives and tracks, administers and reports on the intervention, calculates and tracks both "behavioral" and "cost" risk scores and supplies information directly to carriers triggering carrier prevention and case management interventions.

Outcomes of this intervention are as follows: 83% sustained participation rate at Cianbro Corporation, 95% sustained participation rate at Dearborn Precision (% of employees and spouses participating that are enrolled in the medical plan, n = 1,776 Cianbro and n = 193 Dearborn); from year 3 to current year 6 of the program at Cianbro, the percent of participants in the low cost risk status (0-2 risks of a number of risks relevant to company cost) has remained at 74.5%; from Jan. 1, 2005 to March 1, 2007, during the first two years of the program, the stable group of participants at Dearborn (n = 193) experienced a reduction in the high behavioral risk category of -60.2 % (from 93-37 participants) and an increase in the low behavioral risk category of 280% (from 20 to 76); Cianbro experienced a reduced rate of increase in per member annual health care costs of 10% sustained over 4 years to date (overall claims minus catastrophic decreased by 5% from 2004 to 2005) with an ROI relative to program costs of 8:1.

This wellness intervention model changes behavior, sustains changes and provides positive economic impact.

POSTER # 48

Using Promotores de Salud to Promote HIV Prevention and Pesticide Safety Among Farm Workers

Shelley Davis, JD

Farmworker Justice

Farmworker Justice (FJ), a national non-profit advocacy and education group based in Washington D.C., is dedicated to improving the living and working conditions of migrant and seasonal farmworkers and their families. In support of its mission, FJ partnered with community-based organizations to develop and implement a program to promote the prevention of HIV/AIDS and sexually transmitted infections (STIs) and to encourage pesticide safety on the job, using promotores de salud (lay health educators).

Of the 2.5 million farmworkers employed in the U.S., the majority (79%) are foreign-born, with 75% from Mexico. Like other Hispanics, farmworkers are disproportionately affected by HIV/AIDS. Although Hispanics comprise only 12.5% of the U.S. population they account for 19.8% of all HIV/AIDS cases among adult males.

Researchers have conducted relatively few studies of HIV-infection rates among migrant farmworkers specifically, but the findings of these studies are cause for concern. The Commission to Prevent Infant Mortality estimates that 5%of migrant farmworkers (125,000 people) are infected with HIV/AIDS – nearly 10 times the U.S. national average. Studies in Florida, North Carolina, South Carolina, and California have shown seroprevalence rates ranging from nearly 2% to 13.5%. For male migrants, risk factors include low condom use, multiple partners, having sex with other men, paying for sex, and injecting antibiotics, vitamins or illegal drugs.

Agriculture is also one of the most hazardous industries in the nation. In 2005, the on-the-job fatality rate for workers in the combined category of agriculture, forestry, fishing and hunting was the highest of any private sector with 32.5 deaths per 100,000 workers. The EPA also estimates that between 10,000 and 20,000 farmworkers suffer acute pesticide poisoning each year due to occupational exposure. Farmworkers also have limited workplace protections and are only entitled to receive pesticide safety training once every five years.

The goals of FJ's health promotion programs are to: 1) improve HIV/AIDS and STI prevention by increasing both condom use and HIV testing and 2) to improve pesticide safety by increasing farmworkers' knowledge of the short- and long- term health effects associated with the specific pesticides used at their worksites and practical steps they could take to protect themselves and their families. To implement these programs, FJ and its local partners recruited and trained farmworkers and their family members to deliver prevention messages. They distributed fotonovelas (comic book-style stories with HIV prevention messages) we developed and a crop booklet which provided pesticide information in a pictorial format.

As a result of these programs, the promotores de salud took on a wide range of leadership roles in the community. They hosted radio programs, wrote their own fotonovela, became members of community planning groups, etc. Pre- and post- intervention questionnaires showed that farmworkers' knowledge of HIV prevention increased as did self-reported condom use and HIV testing. Knowledge of pesticide risks was also substantially increased as was self-reported use of protective measures i.e., bathing and changing upon return home from work.

POSTER # 49

Ambulance Motor Vehicle Crashes: A Methodology to Reduce Frequency

Peter Dworsky, MPH

MONOC

Over the years there have been questions within the ambulance industry as to how to prevent motor vehicle crashes. Another question that has been asked is how many crashes per mile or unit hour are too many. Unfortunately, there are very few benchmarking studies in this industry, despite the knowledge that these events occur on a daily basis. According to the NHTSA Fatal Accident Report, there are 8,500 collisions involving ambulances annually resulting in over 10,000 EMS injuries and one fatality per week.

We conducted a three and half year retrospective study of motor vehicle crashes that occurred in an ambulance service to determine a frequency base line and identify methodologies to implement a crash reduction program. The study examined an agency that provides Paramedic, Basic Life Support - emergency and non-emergency, and Specialty Care Transport services. The annual miles driven exceeded 4.2 million and were in both a suburban and urban environment with over 150 ambulances and 650 employees.

In order to establish a baseline for incidents, forty-five data points were collected in the study via an online incident reporting system, correlation with the New Jersey Police Crash Investigative Report and a review of an onboard video camera system. During this period, there were a total of 350 motor vehicle crashes in the data base of which 330 had sufficient data to be enrolled in this study.

While the data was being collected, administrative and operational controls were implemented. These included: screening of all employee Motor Vehicle Driver Abstracts prior to employment; completion of the National Safety Council's Coaching the Emergency Vehicle Operator's course prior to getting behind the wheel; monitoring of excessive speed via an onboard computer system integrated with the GPS which that advises the operator and management if they exceed a preset speed; ongoing review of the onboard video surveillance system that enables management to review collisions, driver behavior, and gravity based changes in the vehicle's lateral and horizontal planes.

Additionally, we have implemented multiple policies related to general operations of the ambulances, backing up, use of cell phones, seatbelt usage and when and when not to drive in emergency mode.

As a result, we established our baseline of 26 accidents per million miles driven. We are unable to compare this rate to other EMS providers as it is not captured by other agencies or they are unwilling to share the data. Our data shows that 57% of the time the ambulance was not assigned to a call, 75% of the collisions occurred in a non-emergency mode, the majority do not happen at intersections and most happen as sideswipe contact.

We continually refine the data being collected and are also attempting to create a severity scale to ensure that we are able to compare collisions fairly and accurately. This will enable us to show that from a loss prevention standpoint, the numbers of collisions are not the only indicator of success or failure

POSTER # 50

A Participatory Approach to Worksite Health Promotion Programs

Pouran Faghri, MD, MS

University of Connecticut

Background: High-demand jobs, with inadequate application of ergonomic principles to the design of the workplace and with little decision latitude for employees, appear to have significant impact on cardiovascular as well as musculoskeletal health. The organizational structure of work has been identified as a major contributor to employee health behaviors, such as physical activity, eating habits and smoking. Social support by both supervisor and co-workers also has an impact by buffering these exposures to decrease stress level and possibly related cardiovascular disease. In this project, as a component of the Center for Promoting Health in the New England Workplace (CPH-NEW), we propose to develop a worksite readiness checklist (WRCL) for assessment of conditions relevant to integration of participatory workplace health and safety and worksite health promotion programs (WHS+WHP). The purpose of the WRCL is to evaluate the management, employees, and organization for their level of readiness for successful program implementation and provide feedback to the worksite with an action plan based on the results of the checklist.

Objectives:
1 To develop a WRCL for integrated assessment of ergonomic exposures, health-relevant conditions, and health promotion activity at work; 2 To utilize the results of the WRCL in developing an action plan specific to the worksite; 3 To assist employees in identifying and prioritizing participatory WHS+WHP activities for implementation at work.

Approaches: Most organizations assume that implementation of WHP is costly, and time intensive and they doubt the sufficiency of human resources and funds. As a result institutional motivation and self-efficacy are often low. However, with technical support and continuous assistance, feasible programs could be developed while including a participatory approach that engages both management and the workforce. Accordingly, reinforcement and feedback are necessary for employees and management.

The WRCL will have three assessment components, 1) management readiness and support, 2) employee readiness including employees health risk assessment), and 3) organizational, physical and psychosocial conditions that affect employee health. Based on a scoring system an easily understood and feasible action plan can be developed for an organization that includes menus of feasible WHS+WHP program options, in part based on employee recommendations for programmatic interventions. It must provide systematic, comprehensive and concrete information and knowledge on available resources, identify and disseminate good practices, and provide personnel with expertise to facilitate the planning and activities. The action plan will be multi dimensional to encourage company's voluntary initiatives into various areas of WHS+WHP. It will provide basic knowledge, list of available resources to increase motivation and self-efficacy, and will provide examples of good practices.

Summary: To be successful, health promotion programs must be matched to an organization's resources during the early stages of implementation. In improving employees' heath, the integration of workplace safety and health ergonomic principles and health promoting activities are hypothesized to provide more successful outcomes. It is also important that this integrative process pay adequate attention to assisting employees by increasing their self efficacy so they actively participate in changing the worksite and their lifestyle choices.

POSTER # 51

Screening and Surveillance of Asthmatics for Workplace Aggravation of Asthma Symptoms

George Friedman-Jimenez, MD

NYU School of Medicine

Workplace aggravation of asthma symptoms (WAAS) can often be reduced or prevented by control of respiratory irritant exposures in the workplace, using industrial hygiene methods. Published estimates of prevalence of WAAS among asthmatics have ranged from 16% to 33%. This study ascertained WAAS among 498 asthmatic outpatients (58% Latino, 25% African American) in an urban municipal hospital that serves a predominantly low income population. WAAS was defined as a "yes" response to either question of the 2-question screening battery that performed best in a separate validation study. The validation study compared small subsets of 13 candidate screening questions against a long, detailed physician history. Using this definition, prevalence of WAAS in current or most recent job was 50%. Using other reasonable definitions based on combinations of 1 to 5 similar questions, prevalences ranged from 36% to 62%. For most cases the reported exposures, jobs, symptom triggers, and dates of first symptom onset suggested work-aggravated asthma rather than new onset, sensitizer-induced occupational asthma. Surveillance for WAAS should use validated groups of questions, and should specifically include statistically adequate sampling of the urban African American and Latino populations at highest risk for asthma. Screening asthmatics for WAAS could produce substantial public health benefits, provided it is combined with careful clinical followup (preferably including objective testing such as serial peak flow measurements) to confirm or exclude work-aggravated asthma, distinguish it from sensitizer-induced occupational asthma (if possible), and implement effective industrial hygiene and educational interventions to reduce exposures.

POSTER # 53

Community Readiness to Provide Clean Indoor Air for Workers

Ellen Hahn, DNS, RN

University of Kentucky

The paper will present a conceptual model for promoting community change to reduce worker health risks from exposure to secondhand smoke. Health and business economic data from hospitality workers in one city that went smoke-free as well as workers in one large national restaurant chain will be presented to highlight community readiness for smoke-free policy. Hospitality workers are a special population at risk of secondhand smoke exposure compared to other occupations. Non-smoking employees who are exposed to secondhand smoke have a higher number of absence days than non-smoking employees who are not exposed to secondhand smoke at work.

Passive smoking causes coronary heart disease, lung cancer, and various respiratory ailments. Passive smokers also experience other health conditions including eye irritation, headaches, nasal symptoms, coughs, wheezing, and hoarseness. These conditions have the potential to adversely affect the labor productivity and job tenure of workers exposed to secondhand tobacco smoke. Businesses that ban smoking report that office cleaning costs are reduced, and equipment lasts as much as 60% longer in clean air. Smoke-free workplaces are associated with a 29% drop in cigarette consumption.

This paper is directly relevant to work life in that it focuses on an important occupational cancer and cardiovascular risk and asthma trigger. While we know the positive health effects of smoke-free workplace policies, passing such laws or voluntary policies is often difficult at best and is not always political feasible. Business owners and the tobacco and alcohol industries often oppose such regulations arguing that these laws violate property rights and result in economic harm. As a result, these special interests often create a critical barrier to the integration of health protection and health promotion efforts in the work-life environment.

The Community Readiness Model for smoke-free policy development is based on a hierarchical approach, asserting that communities advance through a series of stages to effectively develop, implement and evaluate prevention or intervention programs.

Communities are assessed on six dimensions to determine their overall stage of readiness for protection of worker health: community knowledge about the problem or issue; existing efforts to deal with the problem; community climate; leadership; resources; and political climate. Based on these dimensions, communities likely vary in their level of readiness.

Based on assessment of the six dimensions of readiness, communities are identified at one of these stages of readiness for smoke-free policy development: unawareness, vague awareness, preplanning, preparation, initiation, and endorsement. Based on the identified stage of readiness, stage-specific, tailored, evidence-based community interventions are applied to move the community toward smoke-free policy development. The interventions involve (a) translation and dissemination of science; (b) building capacity for smoke-free workplace policy; and (c) building demand for clean air for all workers. Research on over 100 hospitality workers in one smoke-free city showed a 56% drop in hair nicotine just three months after the law went into effect, and bar workers had the most to gain from the law. Research on workers in one national restaurant chain showed no effect of smoke-free laws on employee turnover.

POSTER # 54

Tobacco Dependence Treatment and Healthcare Workers

Ellen Hahn, DNS, RN

University of Kentucky

Tobacco use is the leading cause of preventable death in the United States affecting over 45 million smokers and contributing to nearly 500,000 deaths each year. Kentucky leads the nation in smoking prevalence among adult workers. For healthcare workers, smoking is a serious issue. Nurses have the highest rate of smoking among all health care professionals. Smoking prevalence among nursing students is four times higher than medical students. Numerous studies support the important difference nurses can make with helping their patients quit smoking; however, nurses who smoke may feel less confident and more reluctant to offer intervention to their patients. Other barriers include apathy because of the difficulties expected in treating an addiction, lack of training in motivational interviewing and other evidence-based cessation techniques, and reimbursement issues.

Clinicians with training in tobacco use dependence are more likely to intervene with patients than those who are not trained. However, studies show that clinicians who smoke are less likely to use clinical practice guidelines with their patients. Further, students in the health professions (ie., future healthcare workers) receive inadequate training for treating tobacco use and dependence. The absence of comprehensive tobacco prevention and cessation training in nursing education can result in lost opportunities for promoting cessation and nicotine dependence treatment (NDT). Aggressive curriculum changes to include education on treating tobacco use and dependence are needed for all current and future healthcare workers.

The purpose of the presentation will be to describe the conceptual development of an interdisciplinary tobacco dependence treatment center located in an academic medical setting with a focus on assisting tobacco dependent nurses and healthcare workers. Pilot data will be presented on the smoking behaviors; knowledge of, confidence in, and attitudes toward tobacco dependence among current and future nurses. Two cohorts of current and future healthcare workers were studied; 77 future healthcare workers (Cohort I) and 89 future and 15 current workers (Cohort II).
The Interdisciplinary Tobacco Dependence Treatment Center model includes clinical treatment services, employee assistance, research and evaluation, and provider education. A full-time Tobacco Treatment Nurse Specialist will provide individual counseling and will oversee the provision of intensive group counseling and pharmacotherapy with nurses and healthcare workers. In Cohort I, 10% of future nurses reported daily or non-daily use of tobacco products. In Cohort II, future and current nurses reported similar use of tobacco products: 14.6%. Findings from Cohort I revealed that 61% rated their ability to help patients quit smoking as poor or fair. Almost 3/4th (72%) reported they were not at all or not very confident in counseling patients on addiction. Nearly all (94%) said nurses should be more active in helping patients quit using tobacco. Current and future healthcare workers in the tobacco-producing states have relatively high smoking rates, minimum knowledge, and they report limited confidence in their ability to provide tobacco dependence treatment and view it as a valuable part of their education.

POSTER # 55

Strategies to Improve Employee Influenza Vaccination Rates in U.S. Nursing Homes

Lauren Harris-Kojetin, MA, PhD

National Center for Health Statistics, Centers for Disease Control and Prevention

Purpose: This study describes the association between influenza vaccination rates among employees in U.S. nursing homes and strategies used by nursing homes to encourage employee vaccinations.

Background: Nursing home residents are at particular risk for the complications of influenza. Influenza outbreaks have been reported in nursing homes, despite high immunization rates among residents. Influenza vaccination of nursing home staff is associated with decreased incidence of influenza outbreaks among nursing home residents, and reduced absenteeism and influenza infection among staff. The Advisory Committee on Immunization Practices (ACIP) recommends annual influenza vaccination for healthcare workers, yet national data show that only 36% of health care workers are vaccinated annually. The ACIP and CDC's Healthcare Infection Control Practices Advisory Committee recommend that facilities provide influenza vaccinations to their staff at the work site and at no cost.

Approach: Data were from the 2004 National Nursing Home Survey (NNHS), a national probability survey of 1,174 facilities, representing a weighted total of 16,081 nationally. Variables included: the facility-level report of percent of employees who received the influenza vaccination in the last flu season, an ordinal measure dichotomized for analysis into 0%-60% and 61-100% to reflect a natural cut point in the data; and, whether or not the facility used each of six strategies to encourage employees' influenza vaccinations. Other facility-related variables included: whether the facility was part of a chain, ownership, bedsize, percent of residents with Medicaid as primary payment source, facility accreditation, use of electronic information systems for staff scheduling or personnel information, infection control coordinator on staff, census region, and location in a metropolitan statistical area. Bivariate analyses using Chi-square tests were used. Only statistically significant results ($p < .05$) were reported.

Findings: The median employee vaccination rate ranged from 41-60%, with 62% of facilities reporting 60% or fewer of their employees vaccinated. Most common among vaccination promotion strategies were offering vaccinations on site (86%), recommending vaccinations (83%), and offering vaccinations for free (82%). Less often used were furloughing employees who developed influenza-like illness (34%), requiring proof of vaccination as a condition of employment (9%), and staff incentives (8%). Three of the six strategies (free, furloughing, proof) were significantly associated with higher staff influenza vaccination rates. Among these three strategies, two were infrequently used; conversely, two of the most commonly used strategies (offering vaccinations on site and recommending vaccinations) were not associated significantly with higher vaccination rates. Facilities more likely to provide free influenza vaccinations were not-for-profit, accredited, located in the Northeast, and located in neither a metropolitan nor micropolitan statistical area; had a lower percent of residents with Medicaid; and used electronic information systems for staff information. Facilities requiring proof of vaccination were more likely to be accredited and located in the Northeast and South. Furloughing facilities were more likely to be not-for-profit. These findings may be used to inform successful employee vaccination promotion strategies.

POSTER # 56

Moving Beyond "Stretching to Prevent Workplace Injuries"

Jennifer Hess, DC, MPH, PhD

University of Oregon, Labor Education and Research Center

In 2005, strains and sprains were the leading nature of injury and illness in every major industry sector and musculoskeletal disorders (MSDs) accounted for 30%of injuries and illnesses with time away from work (BLS News, 2006). As a means of decreasing MSDs many businesses are implementing worksite stretching programs. The purpose of this presentation is to examine the reasons stretching has become so popular in the occupational setting and to discuss the need to design more comprehensive, evidence based fitness programs, which work in combination with ergonomics, so that we don't just prevent injury, but enhance worker health and safety.

The rationale for stretching at work is based on sports literature suggesting that stretching before an activity can prevent injury. However, this body of research is very controversial and many believe that stretching before a sporting event is of no benefit or, it may actually increases the risk of injury (Thacker, 2004; Shrier, 1999). The results of some studies suggest that stretching may prevent injuries in activities involving bouncing and jumping like soccer or football, while for low intensity activities, such as jogging or swimming, there is little protective effect from stretching. Hence, before deciding who will benefit from stretching at work, additional research is needed to explore whether specific work activities are more similar to soccer or jogging. Studies will be presented that suggest there is little evidence in the peer-reviewed literature that stretching programs actually reduce musculoskeletal injuries in the workplace. Moreover, workplace-stretching programs vary widely in terms of exercise composition, duration, physical demand, and worker compliance. Endurance has been shown to be more protective than strength training for preventing injury (McGill, 2002), and muscle balance and tone are also important for maintaining a healthy musculoskeletal system, while aerobics are important for cardiovascular health.

Enhancing worker fitness and preventing workplace musculoskeletal injuries entails more than 5-minutes of morning stretching. There are no 'quick fixes' and comprehensive, evidence based programs should be developed or worksite fitness runs the risk of being viewed as just another 'flavor of the month' program. If programs are poorly designed and injury decreases do not follow, these programs could loose credibility with employers and workers alike. Lastly, in some cases stretching and fitness are adopted as inexpensive means of trying to reduce injuries while proven ergonomic interventions are ignored. The future of worker health and safety requires development of workplace programs that include evidence based, comprehensive fitness curricula that work in conjunction with jobsite hazard assessments and ergonomic interventions.

The approach of this presentation will be to highlight the controversy in the sports literature around stretching, present studies that have evaluated worksite stretching and/or fitness programs, and discuss aspects of more comprehensive programs that combine worker fitness and ergonomics to result in a healthier workforce.

POSTER # 57

PROFILES: A Computer-based Process for Economic Nutrition Policy Analysis and Advocacy on Obesity as Related to Workplace Health-Directed Efforts

Helen Heymann, MSC

Academy for Educational Development

PROFILES is a process for nutrition policy analysis and advocacy that uses epidemiological models to estimate the functional consequences of obesity in terms that policy makers understand for making the economic case for workplace wellness programs. Historically, AED has used the PROFILES models covering problems of malnutrition such as micronutrient deficiencies as well as overnutrition for nutrition policy analysis and dialogue with partners in 35 countries worldwide.

For the obesity worksite model local demographic, economic and nutrition data are used to quantify the consequences of obesity in terms of productivity and health care costs. The models' estimates have programmatic implications for workplace wellness programs.

The PROFILES process typically consists of working with national multi-sectoral representatives having a stake in improved nutrition and in workplace health-directed efforts in particular. Steps include identifying nutrition policy reform priorities such as for worker health; using epidemiological models to quantify the potential gains of feasible improvements in nutrition for health, survival and the economy and as it relates to the worksite; and developing strategic policy communication strategies and tools for policy dialogue that use these estimates to argue for increased investment in key nutrition interventions that preserve and promote health. Future plans include completing the obesity models for the cardiovascular disease pathway and disseminating the tool to interested employers for making the case to put in place effective worksite programs.

POSTER # 58

KISS for Wellness Success - Applying the Proven Model of Keep It Simple to Ensure Worker Understanding and Acceptance of Wellness Principles

James Horwood

BodyLogic Health Management Incorporated

The success of our approach to teaching back health and soft tissue injury reduction programs is based on keeping the information unpretentious. We use the simple components of: Basic Knowledge + Achievable Improvements. The principle of Keep It Simple Stupid is very important when presenting material that is often threatening to people. You are asking them to admit they need improvement and you are asking them to change their behaviour. If you do it in a way that doesn't overload their ability to comprehend and you don't demand anything too drastic your chance of success is high. We believe the same jargon free, simple-steps-to-success model can be applied to an all encompassing wellness program with the same positive acceptance we have experienced with our programs. A few basic modules covering Nutrition-Fitness-Education should be presented in short sessions that focus on the key steps needed to make lifestyle improvements. Each successive session builds on the previous ones and provides the groundwork for the individual to expand their program and work on long term sustainable changes in lifestyle, health and fitness.

By stressing the basic principals of EAT WELL--MOVE YOUR BODY--IMPROVE YOUR MIND you provide people with the building blocks to gradually change their mindset about acceptable eating habits, personal habits and fitness. An example of the approach is to take three key concepts of nutrition such as: Avoid animal fats; Eat whole grains; Reduce sugar intake. If the logic supporting the concepts is explained in a plainspoken, candid manner then people can accept that these are desirable goals. If you then give them the tools to make the changes by showing them how to substitute foods without demanding they make wholesale changes in their way of life you allow each person to make their own choice and you make that choice simple. Just changing to whole grain bread is success. They've done something positive and over time they can build on that success.

POSTER # 59

Exposure Evaluation and Health Management in Dental Laboratories

Che-Han Hsu

Central Taiwan University of Science and Technology

Dental laboratory technicians are exposed to a variety of hazardous dust in workplaces. These particles are composed of resin, silica dust and non-precious metal alloy during filling, grinding and finishing processes. Occupational exposure studies has demonstrated that the inhaled substances could cause lung-related diseases, yet has received inadequate attention in Taiwan. The purpose of this study is to measure the concentrations of breathing-zone air dust in dental laboratories. Besides, it represents an exploratory effort to determining the exposure levels of heavy metal dust and worker health of dental laboratories.

Personal aerosol exposure surveys were implemented by sampling the levels of respirable suspended particles from dental laboratories. Structured questionnaire surveys of health recognition were applied to 196 dental laboratory technicians (162 males and 34 females) from 37 dental laboratories by trained interviewers during Sep. 05 to May 06. In addition, our non-exposed control group included 38 volunteers (27 males and 11 females) who were not exposed to respiratory toxicants. Analytic methods employed Atomic Absorption instrument with graphite furnace to detect concentrations of heavy metals including chromium, cobalt, nickel, and beryllium from laboratory dust, and technicians¡_ urine samples. Statistical methods included the two-tailed t-test, multi-factorial analysis of variance, and the chi-square test to compare levels of cognitive respiratory symptoms and heavy metal in urine between dental laboratory technicians and the non-exposed group.

The highest mean respiratory exposure level to suspended particles was 1.5 mg/m3 and occurred during finishing and carving of dentures. The mean concentrations of chromium, cobalt, nickel, and beryllium in breathing-zone air metal dust samples were 11.3 ug/m3, 57.6 ug/m3, 5.8 ug/m3 and 0.7 ug/m3 respectively. The mean levels of dental laboratory technician¡_s urinary chromium, cobalt, and nickel were 10-, 186-, and 3-fold higher than those in control group, respectively. However, urinary beryllium was not detectable in both groups. The questionnaire survey results showed that improper work behavior and inherent work activities were the key factors in over exposure of dental laboratory technicians. Nevertheless, almost half of respondents complained of respiratory symptoms (49.5%), and in descending order of eyesight (44.4%), hearing (36.2%), dermal (34.7%), gestation-intestinal (27.6%), and neurological (23.0%) problems.

In a dental laboratory environment, factors such as air current, location of restoration, orientation, and speed of the hand-piece, proximity of the suction tip to the bur, presence of high speed evacuator and water spray will all inference the levels of dust to which, dental technicians are exposed. Their degree of dust exposure can be reduced by the routine use of masks. It is recommended that validation of professional license, improvement of sanitation control in dental laboratories, and also implementation of health survey program should be considered to avoid health hazards.

POSTER # 60

Harnessing the Value of Data as a Communication Tool to Sustain Corporate Leadership in Optimizing Employee/Worksite Health

Vicki Karlan, MPH

Pfizer Health Solutions Incorporated

Pfizer Inc. is dedicated to helping people live longer, healthier, happier lives. As a leading employer, Pfizer is also committed to optimal health for its workforce and dependents. In 2005 Pfizer introduced Healthy Pfizer, a comprehensive, integrated health services and benefits initiative, which includes a health risk assessment (HRA), 24/7 access to a nurse call center, disease management, and health coaching to support lifestyle-related behavior change. Other components include the Healthy Café initiative which was introduced with incentives for healthy meal choices and a physical activity program called Healthy Strides, both of which were developed based on needs identified through HRA data.

From its inception, Healthy Pfizer was championed at the highest levels of the organization by visible, outspoken senior leaders, whose active participation and visibility continues to be critical to its ongoing success. In 2005, Pfizer's CEO first shared his vision of employee health management, in connection with corporate strategy, and assigned operations leadership with the required accountability to realize it. The vision has been shared and embraced by Jeff Kindler, Pfizer's CEO and Chairman. The Healthy Pfizer team built strong leadership engagement by adopting the management reporting approaches most often used by senior leaders to monitor and manage Pfizer's business. Used as a powerful communication tool, reporting on the business of health across the highest levels of the organization, especially critical given the geographic breadth of Pfizer's locations throughout the U.S., has been key to achieving early results and essential to its long-term success. Frequent and meaningful reporting has also proven effective in sustaining enthusiasm for the program as it has evolved.

Leading indicators from year one demonstrate that Healthy Pfizer has already had a positive impact on health behavior change, increased receipt of annual preventive exams, and improved self-reported health status. For example, tobacco use decreased by 15%, the percent of participants who reported they are actively engaged in making healthy lifestyle changes increased by 22%, and there was a 19% increase in receipt of annual preventive exams. Early findings also suggest improvements in productivity and decreased absenteeism.

In addition to sharing how to actively engage senior leaders as health champions through effective management reporting, a variety of other replicable strategies that have been key to Healthy Pfizer's success will also be presented. These include use of a network of health teams and site leaders who champion the program locally and develop site-specific activities that further support organizational goals, integration of employee health benefits with a health and wellness initiative, use of meaningful incentives to reinforce program engagement, building in cultural relevance to ensure optimal adoption and uptake, phased-in program components to sustain momentum over time, and an integrated data system that supports timely access to actionable data, management reporting, and outcomes evaluation.

POSTER # 61

Depressive Symptoms and The Risk of Occupational Injury in a National Sample

Jaeyoung Kim, MD, MPH

Harvard School of Public Health

Background: One in eight working-aged individuals is estimated to be clinically depressed (Simon GE, 1998). Studies show that depression is related to work impairment, disability and lost workdays, and reduced productivity on the job (Kessler, 2001; Steward et al, 2003; Lerner D et al, 2004). Total workplace costs loss due to psychiatric disorders, including depression, was reported as 10 % (Lafland, 2002). However, little is known about the impact of depression on occupational injuries. This study explores the linkage between depressive symptoms and occupational injury among the employed population using a nationally representative sample survey.

Specific purpose and objectives: The Specific Aim is to examine the role of the risk factor of depressive symptoms for occupational injury. The hypothesis is that workers who had depressive symptoms in previous survey years will be at higher risk of occupational injury than non-depressed workers after controlling for appropriate covariates. The interaction between socioeconomic status (SES), gender and occupational injury occurrence will also be examined.

Approach: This study involves the secondary analysis of the Medical Expenditure Panel Survey (MEPS) linked with National Health Interview Survey (NHIS). MEPS are 2-year follow-up panel surveys of previous year¡¯s baseline NHIS population, so each panel of MEPS/NHIS linked file has 3 years of longitudinal feature. We pooled 6 panels from 1997 to 2002 to generate reliable estimates with a large enough sample size. It is valid to pool multiple years of MEPS data because each year of MEPS is designed to be nationally representative.

Depressive symptoms were measured using The Kessler 6-item Psychological Distress Scale (K6) in NHIS. Occupational injuries were identified among self-reported medical condition by the follow up MEPS survey.

The association between depressive symptoms and the risk of occupational injury will be analyzed with logistic regression method using Generalized Estimation Equation (GEE). PROC GENMOD in SAS will be used. Logit link, binomial distribution will be chosen since exposure and outcome of interest is binary. The appropriate correlation structure will be chosen based on diagnostic test of the data. In addition, confounding or effect modification by self-reported mental health status, smoking, alcohol, and substance use, co morbidity, gender, and race will be considered.

Summary of findings and future directions: Depressive workers appear to be at increased risk of occupational injury compared to non-depressive workers at the following survey year. Crude occupational injury rates were 1.9 times higher for those with preceding depressive symptoms.

Studies reported that only about 20% of major depression is adequately treated (Elinson L, 2004; Kessler RC, 2003). Depression can be mitigated if it is appropriately treated with relevant social support. Screening and appropriate treatment for high-risk workers would result in decreasing in occupational injury as well as increasing the ability to work.

POSTER # 62

The Rural Partners Health Heart Program: Heart Health for Small Business

Christine Mason

Bassett Healthcare

Background: In worksites across the nation, cardiovascular disease (CVD) is the leading cause of disability. One in four Americans will die as a result of CVD. The economic burden of CVD continues to increase; employers shoulder a significant portion of these health care costs. Since working adults spend approximately 30% of their time on the job, the work environment is an ideal location to support positive change. A heart-healthy workforce can help to contain costs and improve employee productivity. Small to mid-size employers may not have the resources of larger organizations, such as exercise facilities and wellness programs.

Specific Purpose: The Rural Partners Healthy Heart Program (RPHHP) was developed to form a network of central New York employers who are committed to creating, supporting, and sustaining heart-healthy work environments. Funded through a five-year grant from the New York State Department of Health, the goal of the program is to foster environmental and/or policy changes, aimed at increasing physical activity and heart-healthy eating.

Approach: The RPHHP provides free resources and support to enrolled worksites. Worksite Coordinators are chosen by leadership to act as liaisons between the organization and RPHHP staff. Once enrolled, a site visit is made to meet the Worksite Coordinator, explain the program, and identify current organizational supports using the Heart Check assessment tool. Additionally, this face-to-face visit confirms the organization's commitment and establishes relationships, as the program model relies heavily on electronic communication with Network partners, allowing staff to assist a large number of geographically dispersed rural worksites. The program encourages a progressive, small-steps approach, whereby coordinators are provided low or no-cost interventions that are likely to be successfully integrated into the work culture. Examples include developing indoor/outdoor walking paths, or crafting policy to include healthy food choices at meetings and events. As the program evolves and matures at each site, it is hoped that heart health organizational change will become ingrained in each work environment.

Summary & Future Directions: Currently there are 85 worksites enrolled, employing 12,250 individuals. At baseline, most participating business partners had little health promotion in place. After enrollment in the program, employees report increased daily walking, and more variety and servings of fruits and vegetables. Pedometers are used for walking challenges and competitions. Worksites have purchased exercise equipment such as treadmills and mini-steppers through mini-grants, and employers are offering “exercise break” time. Having this equipment readily available has played a role in encouraging employees to choose exercise during breaks. Other worksites provide healthy snacks, hold 'salad bar lunches', participate in recipe makeovers, and include healthy food choices at meetings. “Wellness Corners”, posting health & wellness information are popular with many worksites. Simple interventions with minimal resources required of the worksite improve organizational efficacy and increase the likelihood of implementation. Leadership support, incentives, and rewards enhance motivation and increase participation.

Further evaluation is needed, to include assessment of changes in employee heart health risk, improvements in employee heart-health behaviors and change and sustainability of environmental and policy initiatives.

POSTER # 63

A Purchaser's Guide to Clinical Preventive Services: Moving Science into Coverage

Andrew Lanza, MPH MSW

Senior Consultant
McKing Consulting, Business Sector, Partnerships and Strategic Alliances
National Center for Health Marketing/CCHIS/CDC

POSTER # 64

The Workplace Wellness Scale Examines the Workplace Health of Healthcare

Gabrielle McHugh, PhD Candidate

University of Northern British Columbia

The extant stress literature provides a mounting body of evidence that work stress and work disability arise from complex interactions between the work environment and the individuals within it. Promoting worksite wellness that incorporates the physical as well as the psychosocial work environment has become the prevalent focus of many organizations. Aside from legislated safety requirements to deal with tangible environmental workplace hazards, companies are introducing workplace changes (e.g. work redesign, flexitime) to improve the quality of work and the workplace. However, it is not merely the presence of policies or procedures that guarantees a healthy workplace Kenny & Cooper, 2003). As many practitioners have observed policy and procedures can adapt easily to a new situation but culture and attitudes tend to take longer. Furthermore, it is these influences of culture and attitudes that Molenaar et al. (2002) observed are strongly linked to a corporation's safety performance. Consequently, understanding the prevailing attitudes or cultural climate surrounding workplace wellness is a requirement when considering what changes or interventions to initiate that enhance workplace wellness. Indeed, the full potential of wellness interventions is better realized when they are set within a larger framework of a supporting organizational climate (Amick et al., 2000). Therefore, our objectives in this study are two-fold. First, is to develop the Workplace Wellness Scale (WWS). This scale will assist employers efficiently assess their organizational climate and prevailing attitudes towards workplace wellness. The WWS is a survey instrument for gathering baseline data, ongoing comparative and evaluative data and a tool to guide decision making on issues of workplace wellness. Second, is to provide practitioners with research demonstrating that positive workplace climate as measured by the Workplace Wellness Scale is negatively correlated with workplace absenteeism and positively correlated with job satisfaction - factors that are positively linked to organizational goals (Nielsen et al. 2004).

Method: A cross sectional, correlational survey methodology was used. Participants were recruited from multiple sites of a health authority (HA) in Northern BC. Focus groups of key HA participants were arranged for the developmental stages of the WWS measure. The WWS is a self-administered, 5-point Likert scaled questionnaire covering dimensions of employee involvement/active participation in the workplace; levels of autonomy, skill discretion and work-life balance within the workplace; and perceptions of organizational support for workplace health, wellbeing, safety, and prevention policies and practices.

Findings: The WWS was piloted within one HA site yielding a response rate of 29%. Iteman analysis was conducted yielding Cronbach reliability coefficients of .9 to .6 across the dimensions. Items in the instrument were re-evaluated for clarity. Pilot 2 was conducted across three sites yielding a response rate of 34%. Full distribution of the instrument is currently underway and will be reported at the conference. Factor analyses will be conducted to assess the factor structure and underlying conceptual basis of the factors. The predictive regression analysis will also be available.

POSTER # 65

Work/Life Recovery Support for Federal Workers Following a Natural Disaster

Jeff Mintzer, MSW, CEAP, LICSW

Federal Occupational Health

Introduction: The Federal Occupational Health (FOH) Work/Life program, WorkLife4You, provides essential services that enhance and in some cases restore work/life balance for small and large federal workplace communities impacted by natural disasters.

Background: Federal Occupational Health (FOH), a component of the Program Support Center, Department of Health and Human Services, provides comprehensive environmental, safety, behavioral and occupational health services for federal agencies. FOH provides health and wellness services through more than 300 worksite health centers and 33 wellness/fitness centers located across the country and serves approximately 1 million federal employees and their families through its Employee Assistance and Work/Life Programs. The FOH Work/Life Program, WorkLife4You, offers employees and their family members 24/7 consultation, education and referral services to assist them with a broad range of life management issues, including key elements of the President's HealthierUS Initiative. Through WorkLife4You, employees and their family members can easily access services through a single national toll-free telephone number and/or the website, http://www.WorkLife4You.com. An extensive library of materials is available, including helpful articles on diet and nutrition; fitness and exercise; and women's, men's, senior's and children's health and safety. These valuable Work/Life services support and promote healthier employees and families, and contribute to the efficiency and effectiveness of the federal workforce. When searching for needed information and services, the most recent quarterly report from federal employees using WorkLife4You shows an average savings of 20 hours per employee, that otherwise could affect their work. Work/Life services not only save time, but also have the potential of saving healthcare dollars for employees and federal agencies, while promoting key elements of HealthierUS.

Responding to the Extraordinary: The program strategy of WorkLife4You is to prevent, control and treat emotional "dis-ease" as a result of any life event, including traumatic events (natural or human-made disasters) through effective, customized research and referral information, allowing workers and their families to regain balance and a sense of wellbeing.

Most recently, in the aftermath of natural disasters like Hurricane Katrina, Work/Life services proved invaluable. Many federal employees and their families located in the areas affected by Katrina were required to relocate to new communities. WorkLife4You assisted the agencies and their displaced employees by locating housing, transportation, dependent care, schools, and other required resources to assist with this move, and help families settle into a new community. WorkLife4You specialists were even able to locate child care providers willing to temporarily waive the required documentation (e.g., immunization history, birth certificates, etc.) since many families did not have access to this documentation in the aftermath
of the storm.

Currently, Work/Life services provides enhanced disaster support that offers personalized recovery assistance, from researching options, to making reservations, scheduling appointments, conducting transactions, and arranging for delivery.

POSTER # 66

Global Occupational Health: Increasing Access to Occupational Health Training Materials and Practice Tools

Leslie Nickels, MeD

Great Lakes Centers for Occupational and Environmental Safety and Health, University of Illinois at Chicago School of Public Health

The training of occupational safety and health professionals in the developing world is one of the priority areas under the World Health Organization (WHO) Collaborating Centres' Work Plan to achieve the WHO goal of "Occupational Health for All." The obstacles to training include lack of in-country training programs, lack of training materials, costs of receiving training, and intellectual property protection of many training materials. The internet provides a mechanism for occupational safety and health practitioners to rapidly access and download digitized training materials for self-instruction or training of others. Under the auspices of the WHO Occupational Health program, and with support from the Abbott fund and U.S. government grants, we have developed a global electronic library of training materials in occupational and environmental health. The key features of this library include: 1) free access; 2) available training materials are in the public domain; 3) the interface is in six languages (English, French, Spanish, Russian, Arabic, and Chinese); 4) it has an easy to follow, branching index; and 5) it is searchable. Training materials are placed in the library through a network of contributing editors, which include WHO Collaborating Centres in Occupational Health, national institutes, university programs, and non-governmental organizations working in the fields of occupational and environmental health. Examples of training materials include case studies, slideshows, tutorials, course syllabi, and curricula for short and academic courses as well as web casts and some on-line courses. Examples of practice tools include fact sheets, criteria documents, data bases, maps, modeling tools, checklists and calculators. The library can be accessed via the internet at www.geolibrary.org. The library currently has almost 500 materials submitted by 17 contributing editors from seven countries. Occupational materials most often accessed include WHO Modules in Occupational Health, Hygiene and Safety; Occupational Health: A manual for primary healthcare workers; Community-Based Participatory Research; Introduction to Ergonomics; Lead Poisoning Prevention & Removal; Safety Awareness for Responders to Hurricanes: Protect yourself while helping others; Conducting an Exposure Assessment; Case Studies in Environmental Medicine Pediatric Environmental Health; EnviroRisk; and TOXNET Toxicology Data Network.

POSTER # 67

A Comparison of the Perceptions and Beliefs of Workers and Owners with Regard to Workplace Safety in Small Metal Fabrication Businesses

David Parker, MD

Park Nicollet Clinic

Background: Problems of improving safety in small business establishments may include a lack of resources, limited unionization, and an informal management structure. In general, little is know about how these factors impact health and safety.

Methods: We evaluated worker and manager perceptions of worksite health and safety using Social Cognitive Theory. Businesses were identified through telephone and trade directories as well as meetings with metal-fabrication trade groups. Business owners were recruited to the study principally through personal introduction from union leaders, insurance company employees, business employees and other owners. We used a business safety scorecard to audit the safety conditions, policies and programs, and work practices.

Analysis included basic descriptive statistics and the comparison of means using chi-squares. Multiple linear regressions were used to explore the relationship of the different constructs between employment groups and with business safety scores as moderated by selected demographic variables.

Results: Businesses with safety committees had 1.7-2.1-times higher proportion of positive safety scorecard items than businesses without committees. Union status and business size were not associated with business safety audit results. Non-English- speaking and less educated employees reported higher levels of knowledge about safety than did their more educated and/or English-speaking peers.

Conclusions: The presence of a safety committee is the single most important predicator of workplace safety. Self-reported understanding of workplace safety is greater among employees who do not speak English or have lower levels of formal education. Future worksite interventions should consider the need for participatory worksite safety committees. Multilingual training programs would help reach a greater proportion of workers.

POSTER # 68

Health Promotion and Wellness: Expanding Our Framework for Health in the Workplace

Rebecca Pille

Medical Center/National Security Agency

In recent years, the Health Promotion and Wellness Team of the National Security Agency's Medical Center has expanded its focus in two ways: 1) from individual patients to the workforce as a whole, both in the U.S. and at our locations abroad, and 2) from conventional medicine to whole person approaches that address body, emotion, mind, and spirit. Our various health promotion programs are targeted at the major health risks and needs of the workforce as determined by our in-house health risk assessments. As an occupational health care facililty, for many employees, this team represents the first-line in their health care process. Our programs save lives by identifying individuals with clinical conditions and "at-risk" behaviors. Our interventions are through counseling and education for healthier lifestyle changes. Our program success is demonstrated through customer surveys that reflect a 95% satisfaction rating. Success is also measured by improvements in our patients' overall health risk assessment scores.

What makes our program special is the forward-reaching strategy. The strategy is multi-faceted with goals and objectives to: 1) expand the model of health from "not being sick" to "being well"; 2) emphasize wholeness--body, emotion, mind, and spirit; 3) identify "at-risk" personnel and behaviors; and 4) build the workforce's capacity for self-care.

In addition, our ability to partner with health professionals outside the medical community has expanded the way we address wellness and integrative medicine, such as partnerships with fitness profesionals, massage therapists, meditation and martial arts experts, and mental health professionals.

POSTER # 69

On the Road Again: Health Beliefs and Practices of Long-Haul Truck Drivers

D. Jeanne Pitsenberger, MSM, RN, NP-C

James Madison University, Department of Nursing

Growth in the transportation industry is expected to increase by 18% before 2010, resulting in a large increase in the number of drivers that will be required to meet these increasing demands. Truck drivers are identified as one of the leading occupations with the highest numbers of days away from work due to work-related illnesses and injuries. A cross-sectional exploratory study was performed using a four-page self-administered questionnaire that was developed by Dr. Deborah Reed at the University of Kentucky College of Nursing. The purpose of the study was to identify the health beliefs, practices, access to health care, and driving conditions of long haul drivers at a truck stop off an interstate highway in a southern state. Analysis of the 68 surveys collected showed that only 31% of the drivers had a usual place of health care. 28% did not have any health insurance and only 13% had paid sick leave. The participants reported substantial prevalence of hypertension, backache, and leg pain and sinus problems. More than 48% expressed dissatisfaction with health care while "on the road." Occupational health nurses may be in unique positions to address the special health care needs of this vulnerable driver population through trucker health clinics, websites, or special programs that could be made available at truck stops and other sites where truckers come together.

POSTER # 70

Health Care Delay of Aging Agriculture Producers

Deborah Reed

University of Kentucky, College of Nursing

Background: Numerous barriers for access to health care exist for agricultural producers. The purpose of the study was to determine the factors that influence whether or not producers over age 50 delay seeking medical or dental care.

Design and sample: The data are from one wave (N=958) of a longitudinal study of older farmers. Most were male (52%), were married (90%), with an average age of 67 years. The majority had an annual income of $40,000 or less (56%); 33% worked an off-farm job. 7% of respondents indicated they either had not sought medical care or delayed seeking care because they couldn't afford it, and 8% indicated they had either not seen or delayed seeing a dentist for this same reason. Nearly all had access to one or more types of health insurance (97%), most commonly Medicare (62%) or a private plan (43%). The reported number of health conditions ranged from 0 to 10, with an average of 2.6. Thirty-eight percent rated their general health as 'very good' or 'excellent.'

Methods: Predictors of delay were determined using logistic regression. The fit of the model to the data was assessed using the Hosmer-Lemeshow goodness-of-fit test, and variance inflation factors were examined to determine whether multicollinearity was distorting regression parameters. Data analysis was done using SAS; an alpha level of .05 was used.

Results: The significant predictors of delay in seeking medical care included age, income, type of insurance, self-rated health, and number of health conditions. For every 10-year increase in age, the likelihood of delaying medical treatment decreased by 70%. Those with a private plan as their primary insurance or a private supplementary policy were less likely to delay. Respondents with higher incomes were less likely to delay seeking care. For every unit increase in perceived health, the odds of delaying seeking medical care decreased by 29%. Those with more health conditions were more likely to delay seeking care. The predictors of delay in seeing the dentist included type of insurance, income, number of health conditions, and having an off-farm job. Respondents with Medicaid were less likely than others to delay seeking dental care and higher income was predictive of a lower likelihood of delay. The odds of delaying dental care increased with the number of health conditions. Those with an off-farm job were nearly twice as likely to delay dental care as those who did not have this type of employment. Delay in seeking either type of care was not related to gender, marital status, time spent doing farm work or type of farming. Both logistic models fit the data well, and there was no evidence of multicollinearity for either model.

Summary and Future Directions: Contrary to popular belief, gender, marital status (the “nag factor”), and farm type may not contribute to health seeking behavior of producers. Delay in care as co-morbidities increase may place the producer at risk for poor outcomes, particularly among aging producers. More specific information about delay of care should be determined.

POSTER # 71

Cincinnati Children's Hospital Medical Center Becomes Tobacco Free

Sindy Robbins, Masters of Education

Cincinnati Children's Hospital Medical Center

This effective workplace program provided employees who engaged in tobacco use a means of practicing a change in their behaviors in order to adapt to a change in workplace policy. Cincinnati Children's Hospital Medical Center went tobacco-free in January of 2007. The organization joined the Greater Cincinnati Health Council and 25 other area hospitals in having smoke-free campuses. The new policy read: "All CCHMC employees are required to abstain from tobacco use for their entire work shift and are expected to be free from the smell and evidence of tobacco during their entire work shift." The decision to be tobacco free was to provide a safer and healthier environment for all.

The purpose of the program was to meet the needs of specific employees (those who used tobacco) and their employer. The program focused on improving the employee's health and their ability to work by managing and assisting an organizational change.

The objectives of the program were 1) to raise awareness by providing information as to why Cincinnati Children's Hospital Medical Center chose to become a tobacco free environment, 2) to offer interventions to employees to eliminate tobacco use while at work, and, 3) to provide support systems to assist those who wanted to eliminate tobacco use completely.

The approach to this tobacco-free program was multifaceted. The employer offered a variety of interventions and a comprehensive support system to employees who used tobacco. A total of nine interventions were made available. A grant was obtained to be used to initiate and sustain the marketing campaign. Support systems were offered in a variety of formats: group sessions, one-on-one coaching via e-mail, in person, and by telephone.

Information about this initiative was made available via group e mails, postings on the intranet, articles in the internal magazine and via bulletin boards.

The variety of interventions that were put into place were 1) the incorporation of exercise into daily routines through a variety of methods, 2) increasing the consumption of water or fluids, 3) a gradual nutrition change, 4) stress reduction, 5) check with their physician, and 6). Nicotine replacement therapy, 7). Stress reduction via mindful meditation, 8) on line, telephonic or face to face coaching support 9). Use of the Employee Assistance Program The grant that supplied the marketing support was from GlaxoSmithKline

Based on a summary of the data obtained via an online survey, 498 employees self reported using tobacco products, although all would be expected to be free of tobacco use and the smell of tobacco during their work shift, GlaxoSmithKline, based on experience, predicted 228 would attempt to quit completely.

The evaluation of this program is the next step. Communication via e-mail will be established to discover the effectiveness of the interventions.

POSTER # 72

Early Diagnosis of Occupational Asthma and Exposure Control: Results from a Stepped Care Program in Montreal Targeted at Auto Body Shop Workers

Simard Robert

Public Health Department, Montreal

Background and rationale: Asthma induced by exposure to isocyanates rank first in terms of compensated occupational asthma in Québec. A major source of exposure has been linked to work in auto body shops, where poor environmental control is common. Painters are particularly a high risk group. It is well established that early identification and optimal management of these cases can improve prognosis and reduce the burden of illness. Environmental control of exposure can reduce the incidence of occupational asthma in these small businesses. In this paper, we report the results of a stepped care program focusing on both aspects of asthma control in the workplace, early identification and referral of symptomatic workers, and improved environmental control.

The intervention: The target population included all 284 auto body shops in business during the period between 2001-2005 on Montreal Island. Occupational health teams (a nurse and a technician) from five local health units (CLSC) conducted individual field visits of auto body shops. During the visit, a technician made an assessment of environmental control measures, focusing on spray booths, air-supplied respirators and compliance with occupational standards.
We followed the following clinical algorithm for the early identification of occupational asthma:
1) A short screening questionnaire was completed during the on site visit
2) Positives cases were submitted to a more detailed questionnaire adapted from a research questionnaire
3) The questionnaires were reviewed by an occupational physician from each CLSC
4) If indicated, referral was made to a specialized occupational and environmental health clinic
5) If asthma was confirmed, final referral for compensation and management was made to a tertiary health care center

Results
Environmental control: We noted a dramatic increase from 36% to 80% in the proportion of shops where air-supplied masks were available. The proportion of spray booths meeting air flow standards increased slightly.

Early identification of occupational asthma:
A total of 648 workers completed the short questionnaire on asthma symptoms. Of these, 11% had a positive questionnaire; 8% had asthma symptoms confirmed by the detailed questionnaire. In total, 6% were referred to the occupational health clinic for clinical evaluation. An important proportion did not consult and were lost to follow-up. Only 5 cases were seen by the tertiary care center for suspected occupational asthma and no worker received a confirmed diagnosis of occupational asthma.

Discussion: Encouraging results were seen in terms of primary prevention in these shops. In contrast, the prevalence of asthma was low among these workers and many did not complete the clinical process. Our hypothesis is that many personal and social factors, as well as factors related to the provision of health care are involved and need to be further studied. This intervention shows the complexities of managing occupational asthma on a population basis.

POSTER # 73

Expanding Tobacco Control in the Workplace: State and Federal Initiatives

Abby Rosenthal, MPH

Office on Smoking and Health, Centers for Disease Control and Prevention

Tobacco-use continues to be a seriously under-treated chronic disease. 67% of the U.S. population receives insurance coverage from their employer, yet employers only provide comprehensive tobacco dependence treatment for 4% of employed populations.

To improve coverage for tobacco cessation and increase indoor air quality a number of states have begun working with employers and hospitals. Wisconsin has produced an employer's tool kit which is being printed and distributed by the Manufactures' Association. West Virginia has worked with the state as an employer and Wellcoa to improve cessation benefit coverage and clean indoor air policies through cooperative initiatives. These states will discuss their initiatives, what they accomplished, barriers encountered, solutions, and future directions.

An employer will be invited to discuss their effective tobacco control initiative.

The CDC produced document Addressing Tobacco in the Worksite: A Resource Guide from the Office on Smoking and Health, will be reviewed.

Discussion with participants will promote sharing opportunities around strategies being used in their states or communities and other resources to address tobacco in the worksite.

POSTER # 74

Performance Metrics That Drive and Improve Programs

Liz Scott

IWH/Organizational Solutions Incorporated

The "business" of measuring success is entrenched in corporate culture. It provides the ability to understand and compare what is done to what is achievable. In the disability management and return to work area there has been a gap in the method to measure performance. If success is not measured and goals consistent with evidence based best practices are not established for workplace disability management programs Ill or injured workers, for lack of effective management, will remain out of the workplace, far longer than statistically or medically necessary. This has many profound negative effects.

In order to meet the needs of employers to measure their disability management programs the Institute for Work and Health, Organizational Solutions Inc. and Clarke, Brown and Associates researched existing tools and adapted them to meet the needs of Canadian employers. A cross section of employers is being used to test the applicability and usability of tools. Participating employers are currently from health care, Universities, Finance, Employee benefit trust, and Pharmaceutical. The three key tools that were adapted for use in the project included; U.S. EMPAQ, Organizational Solutions Inc. CADMAT© process assessment tool, and satisfaction surveys.

The use of these three tools to assess employer disability programs will assist employers in determining the robustness of Disability Management programs compared to evidence, identify positives or gaps, allow for the formulation of solutions that will ensure the designed and implemented program is leading edge, provide a basis for peer benchmarking. The tools will assist researchers to more efficiently access workplace based data within and across organizations.

A three step process has been used to determine the viability of the metrics including Phase I - Utility Rating, Phase II - Self Assessment and Phase III - Review Engagement. The outcomes of Phase I resulted in the fine tuning of the metrics and the process used and the results will be discussed in detail during the presentation.

This presentation will provide the audience with the technical discussion of the method that was used to come up with the metrics and the process used to fine tune the metrics. Preliminary results of the vetting process will be shared and practical experiences with the program will be discussed. The presentation will also look at a practical application of the tools at an employer and the success they have had in the use of standardized metrics throughout their organization.

Participants will see how research becomes workplace reality with the application of a well researched and designed set of metrics to advance the outcomes of disability initiatives at the worksite.

POSTER # 75

Capturing Occupational Injuries and Improving Outcomes Through the "Trusted Clinician" at the Workplace

Bruce Sherman, MD

Goodyear Tire and Rubber Company

Onsite occupational health care can have a significant impact on reducing lost time away from work by facilitating clinical and functional recovery from both work-related and non-work-related health conditions. One of the important ways it can do this is by providing a "Trusted Clinician" at the worksite that is the first to provide medical care when an occupational injury occurs. Occupational health providers who can physically view the work environment and understand the physical demands of specific jobs are better able to assess whether an employee can perform their job function, what modifications might be needed or whether another temporary job might be more appropriate than health providers with limited knowledge of the worksite such as community physicians. The latter, while well-meaning, often default to recommending that the employee be removed from the work force temporarily and may delay the full recovery of the employee.

In this study we show how increasing the "capture rate", the percentage of occupational injuries first treated by onsite occupational health care providers mitigates the number of days away from work, occupational injury disability claims and worker's compensation claims. In addition we look at how the level of occupational health and safety services available at industrial worksites influences the relative utilization of return to work programs and total cost of care by occupational-related injury episode for a large U.S. employer with multiple locations. The capture rate, risk-adjusted total cost of care per injury episode, number of days away from work, number of disability claims, number of worker's compensation claims and level of occupational health and safety services are compared across locations.

Findings from this research support the value occupational health providers at the worksite deliver by: improving the health outcomes for employees, reducing costs associated with occupational injuries to employers and increasing the productivity of the workforce treated.

POSTER # 76

"On the Line": Identifying Workplace Stressors in the Professional Restaurant Kitchen

Alicia Sinclair

City University of New York

Job stress poses a threat to the health of workers and, in turn, threatens the health and stability of organizations as well as the Nation's economy. Although many occupations have been examined, from physicians to teachers, there remains a dearth of academic literature for a variety of occupations. Among them is the restaurant industry.

The restaurant industry employs an estimated 12 million people, making it the second largest employer outside of federal government. The purpose of this study was to improve understanding about stressors in the professional restaurant kitchen.

The qualitative research method of situation analysis, which aims at increasing understanding of an interpersonal episode or complex state of affairs-the situation-in the context of the larger narrative of which it is a part-embedding context-in order to understand the complexity of relationships and circumstances that are driving a series of events, was implemented for this study. Specifically, 12 semi-structured interviews were conducted with a variety of restaurant professionals: executive chefs, sous chefs, line cooks, general managers, and wait staff. Two different kitchens in the New York metropolitan area were observed for the dinner service between 4:00pm-11pm, these were upscale, fine dining establishments. The interview subjects were not employed at the observation sites. Nine culinary memoirs were included as a source of archival data for triangulation.

A variety of physical and psychosocial stressors were identified. Extreme temperature, confined space, noise, injury, and illness were reported and observed. In addition, time pressures, drug use, sexism/sexual harassment, long hours, no sick days as well as lack of a living wage and lack of health insurance were also reported. Several important larger-context issues (embedding context) were identified: small pre-tax profit margin, immigration issues, as well as lack of healthcare options for small businesses in the U.S. These issues were identified as major factors behind the stressors restaurant workers faced.

The results indicated that while identification of individual stressors is important, it is not enough to improve employee health. Emphasis must be placed on the embedding context to make significant change. Several important recommendations were made on the governmental, societal, and industry levels.

POSTER # 77

The Idita-Walk: A Statewide Walk to Health

Terry Smith, EdD

U.S. Postal Service

The Iditarod Sled Dog Race is a testament to the training and endurance of the 1,300 canine athletes and 80+ mushers who participate each year.

Using this popular race as a model, in 2006 the U.S. Postal Service Alaska District Partnership for Health Committee decided to sponsor their first-ever, corporate "Idita-Walk." They anticipated maybe 60 employees would participate; so, they ordered 100 pedometers, thinking they would have a few extras just in case. Much to everyone's delight and surprise, 524 employees registered. Of that initial number, 388 finished the event.

Because the steps logged on the pedometers were entered on-line, employees from around the state could participate whether they lived in one of the three Alaska metros or in the many remote villages accessed only by plane or boat.

Using a ratio of 1 Idita-Mile = 16 actual trail miles, the participants made their way from Anchorage to Nome along a virtual Iditarod Sled Dog Race trail, submitting steps logged on their pedometers every week that then were recorded on the Idita-Walk web page. This web site also contained daily health tips, daily Iditarod facts, trail map, list of incentives to be awarded through random drawings, and the very popular Idita-Talk community bulletin board where participants posted pictures and updates about their walking adventures.

To help keep employees motivated, weekly health promotion incentives were awarded through random drawings. A selected number of special prizes also were awarded at various checkpoints along the trail. The winners of these special gifts were drawn at random from the lists of those participants who met the criteria for each award. The special awards were modeled after awards earned by the mushers and teams in the actual Iditarod Sled Dog Race.

Everyone who finished the event earned a T-shirt emblazened with the Idita-Walk logo. Idita-Walkers whose dogs walked at least a third the distance with them earned a "golden" leash.

The Idita-Walk was made possible by a Postal Service Headquarters health promotion grant of funds matched locally by the Alaska District Manager.

POSTER # 78

Enrollment, Retention, and Success among Diverse Audiences in Telephone Counseling for Smoking Cessation

Walton Sumner

Washington University, School of Medicine

Context: Given the association of smoking with low socioeconomic status, the potential of telephone counseling for smoking cessation to reach diverse audiences needs evaluation. In addition, different approaches to counseling have not been systematically examined, and may differentially affect reach, retention, and success.

Purpose: To describe employee participation and outcomes in a trial of two counseling styles for telephone-based smoking cessation support.

Approach: Employees and spouses of a large healthcare organization were invited to participate in the trial. A protocol-driven (Directive) counseling approach follows a script for each of seven calls over 9 weeks. A participant-centered (Nondirective) approach allows the employee to select topics of interest, with prompting by the counselor as needed.

Findings and Future Directions: 328 employees have participated. Participants are 26% ethnic minorities (vs. 27% in the target population) and 67% female. 32% had a high school education or less, and 15% live in rural settings. Mean age is 47.7 years, and 55% are married. Participants were randomly assigned to seven sessions of either Directive or Nondirective telephone counseling, and randomly assigned to one of four trained counselors. With treatment completion defined conservatively as receipt of all 7 counselor calls, the overall completion rate is 45%, with 71% of participants retained beyond the quit date into the follow-up period. Survival analysis indicates that retention is comparable across differences in participant ethnicity, participant gender, and counselor ethnicity. Other candidate predictors of retention, including smoking rate, education, and income, are nonsignificant. Treatment retention has been similar in the Nondirective and Directive arms, as have call duration and total contact time. On average, calls last 20 minutes, with only the last call being substantially shorter at 12 minutes. Total contact time averages over 2 hours for those completing counseling. Among the subset completing the counseling process, it takes 10.3 weeks in the Directive arm and 12.2 weeks in the Nondirective arm. 43% of 111 responding participants report success at 6 months, and 39% report success at 12 months. Including all participants whose first counseling session was at least 6 months earlier, and counting those not yet reached as continuing smokers, the success rate falls to 23% at 6 months. Self-reported 6-month abstinence rates suggest that telephone counseling is, if anything, more effective with lower income employees than with higher income employees. 38% of employees with incomes over $30,000 report success at 6 months, while 49% of lower income employees report success. Thus, telephone counseling for smoking cessation appears robust in ethnically diverse audiences with little apparent vulnerability to differences in counseling style. Minority employees, those with no more than a high school education, and employees paid under $30,000 per year are as likely to complete the telephone counseling process and succeed at smoking cessation as their white, college educated, or higher paid colleagues. We expect to enroll at least 700 and as many as 900 employees, increasing power to detect differences in subgroups. We also hope to extend follow-up to two years.

POSTER # 79

A Comprehensive Ergonomics Program at the University of Michigan

Susan Blitz, Sarah Cooney

University of Michigan Health System

In 2004 the President of the University of Michigan (UM) proposed a major initiative to promote the health and well-being of the UM community, encompassing students, employees and dependents and retirees. The Michigan Healthy Community Initiative Task Force was charged with promoting a culture of health for the University community and developing cost-effective interventions to achieve the objectives. Capitalizing on the workplace as a uniquely valuable setting for encouraging improvements in health behaviors, employees were chosen as the primary target for initial interventions. The goals of the endeavor were improved employee health status, enhanced quality of life, improved work culture and employee satisfaction, improved recruitment and retention, reduced injury rates and absenteeism, reduced health care and disability costs and optimal productivity. These goals would be accomplished by leadership recognition of the value of employee health; improving the knowledge, skills and performance of UM managers in effectively addressing employee health and safety issues; identifying and communicating existing resources; aligning policies and practices to optimize program value; collecting, analyzing and reporting data to ensure ongoing success; building alliances to generate support and participation from all segments of employees; and offering key programs and activities to engage the community. After analyzing the demographics, costs and interests of employees, ergonomics was chosen as on of the first issues to address.

A comprehensive ergonomics program at UM must address the needs of 41,000 employees of the University, including the main academic campus, the Medical Campus and two outlying campuses. An Enhanced Ergonomic Awareness Team was formed representing the campuses and their stakeholders. A broad communications campaign was developed using online and printed resources. A website was developed with tutorials for office, laboratory, materials handling and patient handling material for use at work and home, instructions and videos demonstrating proper techniques and an "ask the ergonomics" site for online question submission. Posters with "No-No-/ERGO images demonstrating proper ergonomic principles were sent by campus mail to employees and were available to download from the website. A targeted equipment solutions program was implemented to identify departments or areas with specific ergonomic deficiencies that could be corrected with purchase of new equipment. Departments were chosen on the basis of specific hazards, injury rates and interest in participating in the program and the cost was shared on a 50:50 basis between departments and the Ergonmics Program.

A Medical Ergonomics initiative was developed to assist employees under a doctor's care for musculoskeletal disorders. Referrals from the UM occupational health clinics as well as from personal physicians were submitted to occupational therapists working on the ergonomics team. The therapists conducted one-on-one consultations with the worker, supervisor and medical providers to optimize the employee's health and productivity by suggesting beneficial self-help techniques, work strategies and equipment arrangement. The success of the first year of the program was demonstrated by broad employee participation and strikingly positive feedback. Analysis of reduced work injuries is ongoing.

POSTER # 80

Environmental Approaches to Obesity Prevention and Management at The Dow Chemical Company: Second Year Results

Ron Goetzel, PhD

Cornell University Institute for Policy Research, Institute for Health and Productivity

Employers recognize the growing problem of obesity and its effects on worker health and productivity, however, there is limited information on effective worksite interventions, especially those directed at environmental/organizational change. In an on-going project funded by the National Heart, Lung and Blood Institute (NHLBI), the Cornell University Institute for Health and Productivity Studies teamed with Thomson Medstat, the University of Georgia, the National Business Group on Health, and The Dow Chemical Company are designing, implementing, and evaluating an environmental and ecological intervention program aimed at preventing and managing overweight/obesity in the Dow workplace.

Overall project goals/objectives include: 1) Design and demonstrate the feasibility of implementing moderate-intensity and high-intensity environmental and ecological interventions directed at overweight and obesity prevention at The Dow Chemical Company. 2) Test the multifaceted hypothesis that, relative to individual interventions, environmental interventions will: a) reduce the prevalence of obesity and overweight, b) reduce the prevalence of other weight-related risk factors, c) improve health, and reduce healthcare utilization and expenditures, and; d) improve an array of indicators known to be related to employee productivity. 3) Test whether savings outweigh program expenses, thus producing a positive financial return on investment. The project is a four-year study beginning in the Fall of 2004 and ending Fall of 2008. The study employs a quasi-experimental, pre-post design, comparing high intensity, moderate intensity and control sites. Data collection is set at three milestones: baseline, year 1 and year 2.

This multi-site, environmental, weight management study tests two levels of environmental interventions superimposed on Dow's existing, individual employee-centered, core health promotion program. Moderate intensity interventions include inexpensive environmental changes, such as designated walking paths, healthy choices in cafeterias and vending machines, and a weight management tracking program. High intensity interventions (above and beyond moderate level interventions) include the engagement of senior managers in the development of a worksite culture that is broadly supportive of improved health among Dow employees, the development of site goals tied to health improvement, and workgroup and team leadership rewards/recognition.

Session leaders will present study results to date, including changes in baseline and year 1 measurements for behavioral health risk, health care utilization, biometric, and productivity (absenteeism and presenteeism) outcomes for control, moderate and high intensity intervention sites. Baseline biometric and health risk data show that 38.4% of Dow's population is at high risk for overweight/obesity, 77.0% are at high risk for poor nutrition, and 8.6% are at high risk for lack of physical activity. Initial results (baseline vs. year 1 follow-up) show positive environmental changes consistent with intervention targets, improvements in employee awareness and leadership support for health promotion. Positive changes compared to baseline were evident in majority of intervention sites reflecting the implementation of several moderate interventions including targeted messages in nutrition and physical activity, offering more healthy food items, and labeling and placement of healthy foods in vending machines and cafeterias. Lessons learned to date will also be shared including implications for expansion and sustainability in Dow's global health strategy.

POSTER # 81

The Influence of Target Size and Weight on the Trunk Muscle Recruitment in Different Lifting Speeds

Jangwhon Yoon

Occupational and Industrial Orthopaedic Center, New York University Hospital for Joint Diseases

Introduction: External environment demands of lifting, such as weight, have been considered as the main risk factors for lower back disorders. However, the significant variability in spinal load during lifting trials under identical conditions cannot be explained by a traditional lifting model such as the NIOSH lifting equation. While the NIOSH lifting equation estimates the Recommended Weight Limits based on the environmental factors, such as weight and distance, behavioral factors such as speed and precision required by lifting task are not considered. The aim of this study was to investigate the effect of weight and precision demand at the lifting destination on selected trunk muscles while controlling for the lifting speed.

Methods: Ten healthy subjects performed a total of 24 lifts (3 lifting trials, 2 levels of precision, 2 weights, and 2 pace conditions), from waist to shoulder level while maintaining the trunk in an upright position. Kinematical data and electromyography (EMG) of eight muscles were collected. Based on kinematical data, phases of lifting were defined and EMG data were analyzed for each phase. Repeated measures multivariate analysis of variance performed to assess the effect of the weight and the target size on the temporal recruitment pattern of EMG while controlling for the lifting speed.

Results & Discussions: The load trajectory was significantly affected by the lifting duration, not by the weight or the target size. Since the lifting distance was constant, the lifting duration was analyzed as a proxy of the lifting speed. The effect of target size and weight on lifting duration was not significant. The temporal recruitment pattern of Lumbar Erector Spinae (LES) was significantly affected by lifting duration. The recruitment of LES increased significantly at the beginning phase of faster lifts. The effects of the weight and the target size on the temporal recruitment pattern of the LES were not significant when the lifting duration was included in the model as a covariate. The proportion of variance in the LES, explained by the lifting duration, was much greater than that by weight or target size.

Conclusions: The temporal recruitment pattern of the trunk muscles and mechanical loads on the lumbar spine can be more influenced by the lifting duration than by the weight of the load. This suggests different motor strategies are applied for different lifting speeds. These findings underscore the importance of proper lifting technique and the training programs beyond optimizing the environmental conditions for lifting.

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